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VOL. V.

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THE MICROSCOPICAL DIAGNOSIS OF DISEASES OF THE BLOOD AND OF PATHOLOGICAL TISSUES.

BY

O. C. GRUNER, M.D., LOND.

Lecturer in Pathology, McGill University, and Pathologist to the Royal Victoria Hospital, Montreal, late Clinical Pathologist, Leeds General Infirmary.

1910

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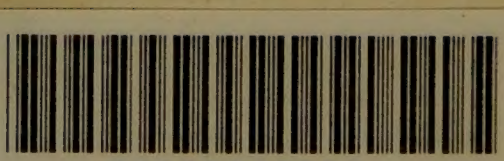
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PREFACE.

This little book has been compiled primarily for the use of Members of the Society of Medical Phonographers. The first section may be more useful to the practitioner, while the second may interest the student.

Discussion of controversial points has necessarily been omitted, and the diagnostic indications which have been given are mainly based on one's own experience.

The limitation of scope of treatment in each of the two sections will be readily understood to be due to a desire to be compact, and make this volume in line with the size of the other volumes of the Phonographic Medical Library.

The Author has in view the publication of a longhand version, which may, however, be a little fuller, but will still enable the less experienced phonographers to follow the present text.

O. C. G.

CONTENTS.

SECTION I.

THE MICROSCOPICAL DIAGNOSIS OF DISEASES OF THE BLOOD.

Introduction 1
Collection of the Blood for Making a Count ... 3
Staining of the Films... 4
Method of Obtaining the Differential Count ... 6
Ideal Blood-counting Form 8
Identification of the Various Cells 9
(*a*) Red Cells 9
(*b*) Blood Plates 11
(*c*) White Cells 12
Diagnostic Table for Varieties of Mononuclear Cells 22
Genesis of the Cells of the Blood-stream ... 23
Clinical Diagnosis based on Abnormalities of the Red Cells 24
Clinical Diagnosis based on Abnormalities of the White Cells 27
Deductions to be made from Observations of Degenerative Changes in Leucocytes... ... 30
Glossary of Terms used in connection with Hæmatology 31

SECTION II.

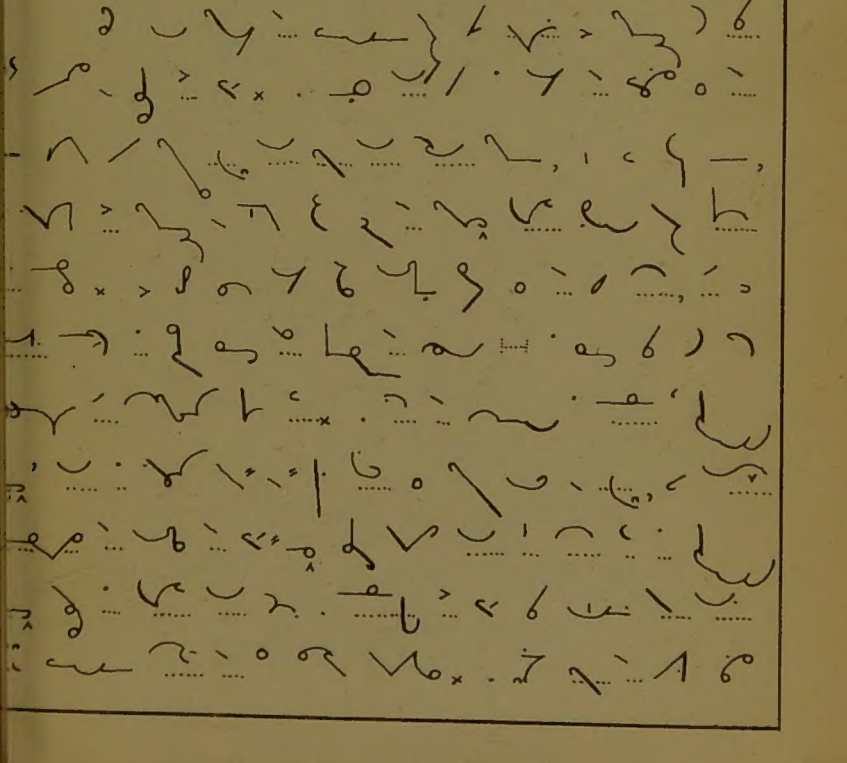
THE MICROSCOPICAL DIAGNOSIS OF DISEASED TISSUES.

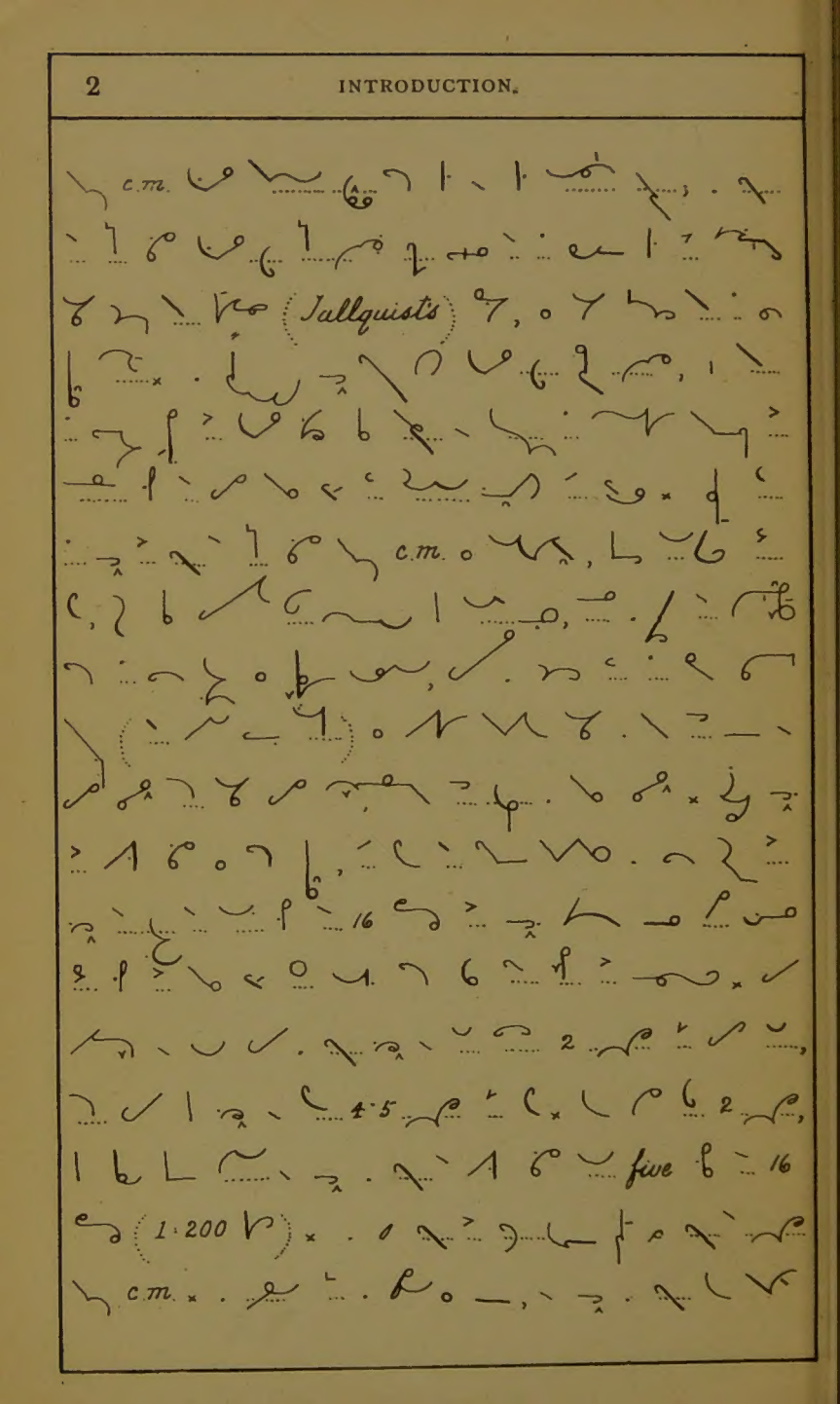
Introduction 38
Preparation of Tissues for Cutting Sections ... 38
Procedure for arriving at a Diagnosis 39
(A) Degenerations 40
(B) Inflammations 40
(C) Newgrowths 43
α. Spindle-shaped Cells 44
β. Round Cells 45
γ. Giant Cells 48
δ. Carcinoma Cells 52
Diagnosis of Various Tissues 55
Appendix 65
Description of Plate 66
Coloured Plate 69

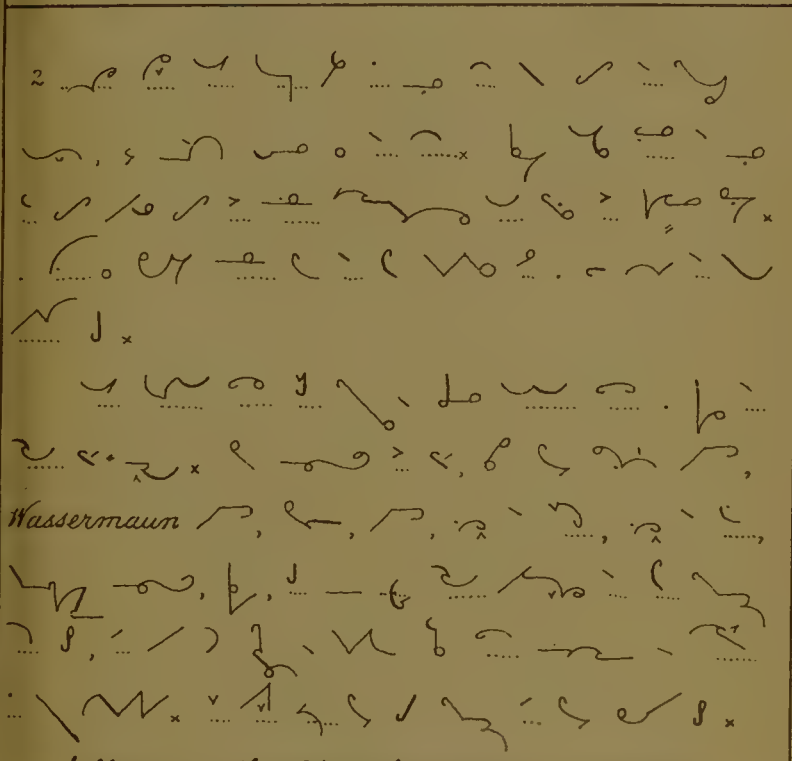
THE MICROSCOPICAL DIAGNOSIS OF DISEASES OF THE BLOOD AND OF PATHOLOGICAL TISSUES.

SECTION I.

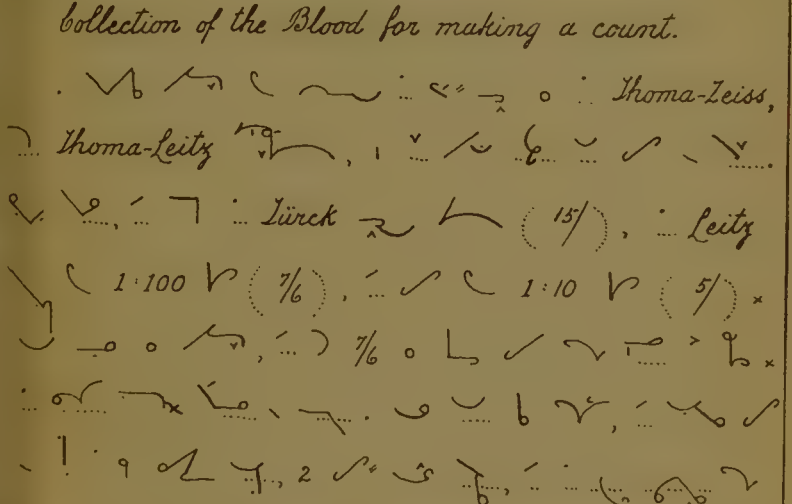
THE DIAGNOSIS OF DISEASES OF THE BLOOD.

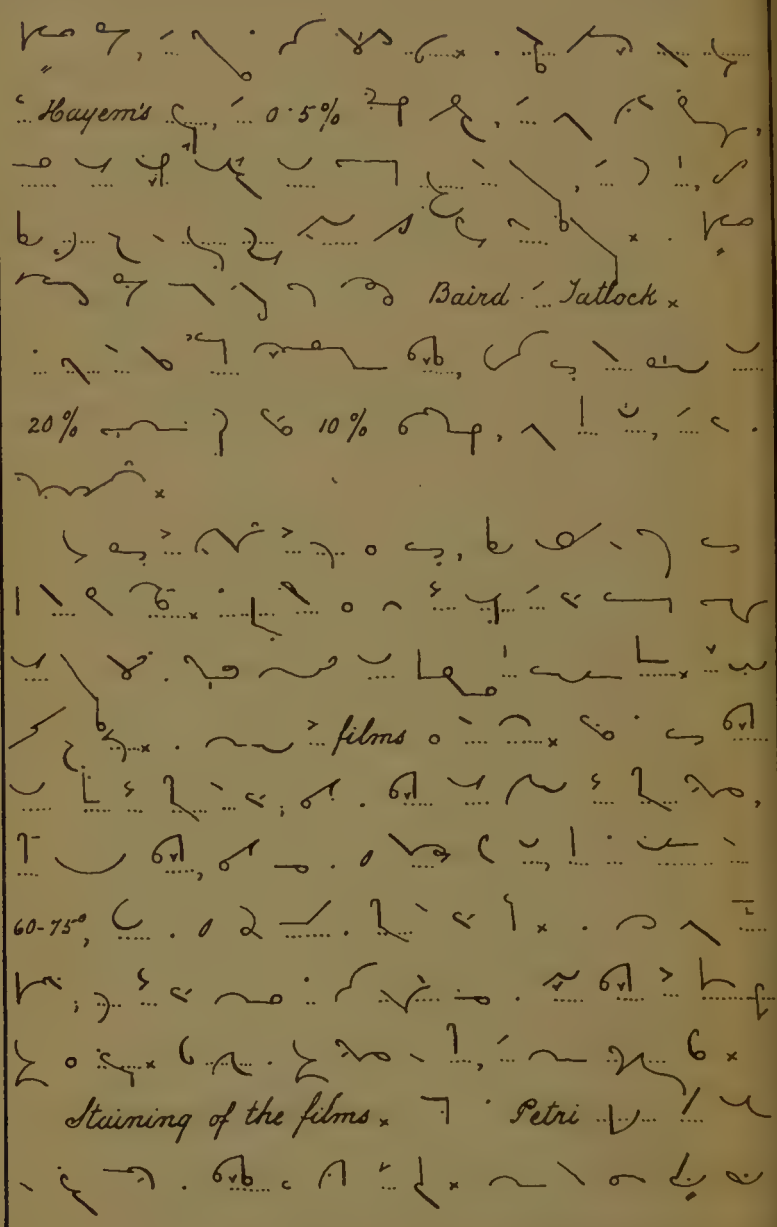



c.m.
(Tallquist's)
c.m.
c.m.
16
2
4·5
2
five
16
(1·200 r)
c.m.



Collection of the Blood for making a count.

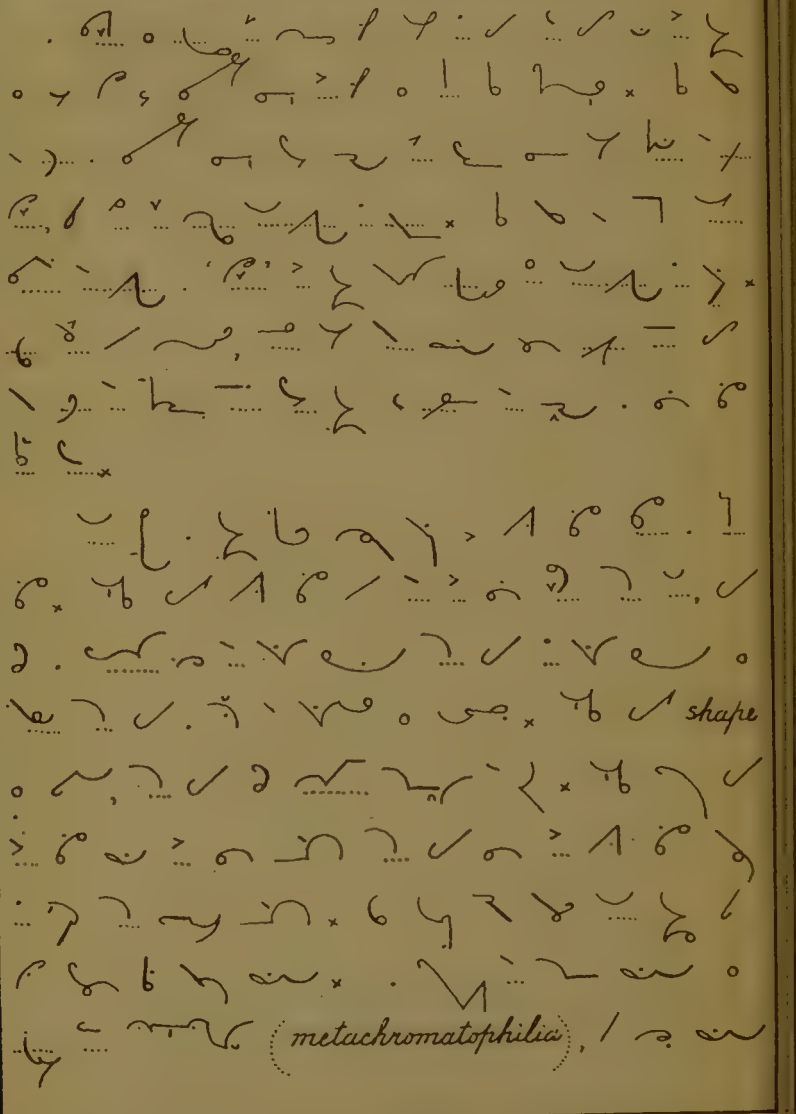


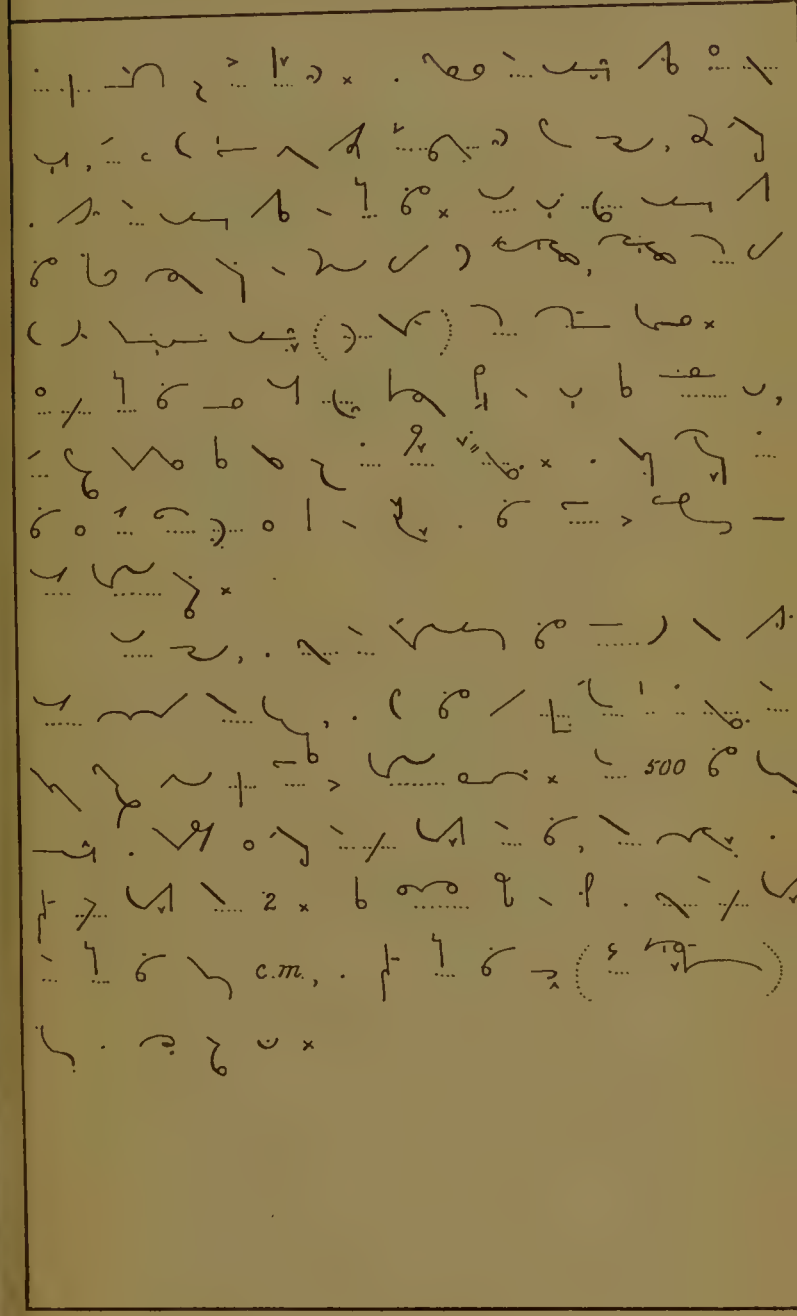

Hayem's 0·5%
Baird Tatlock
20% 10%
films
60-75°
Staining of the films
Petri

(Grübler's 60, 5 gm [illegible] merck [illegible] if the stopper is always turned off after use, [illegible]

Precautions: (1) [illegible] (2) [illegible] (3) [illegible] (4) [illegible] (5) [illegible]

Method of obtaining the Differential count.





Blood-counting Form.

Name of patient Age Date Time of day.

Clinical Notes

Red cells

number per c.m. mills % Colour Index

anisocytosis *

anisochromia *

Poikilocytosis *

metachromatophilia *

nucleated red cells *

normoblasts { natural, with pycnotic nuclei, with free nuclei, with mitotic figures.

megaloblasts { natural, with pycnotic nuclei, with mitotic figures.

Blood-platelets

White cells

giganto blasts

thrond

number per c.m.

Granulocytes { Polynuclears / caryorrhectic { bifid / trifid / plurifid / ; mast cells; Eosinophiles; myelocytes * pro-, micro-, meta-, ordinary myeloblasts

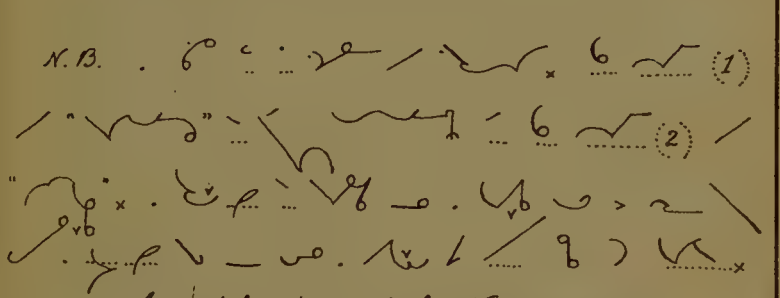
spongiocytes { small lymphocyte 2; ditto, leucocytoid 2; ditto, reniform nucleus 2; Large mononuclear (splenocyte); ditto, lymphocytoid 2; ditto, transitional; mesolymphocytes *; Large lymphocytes *; Rieder's cell *

Total counted

Remarks

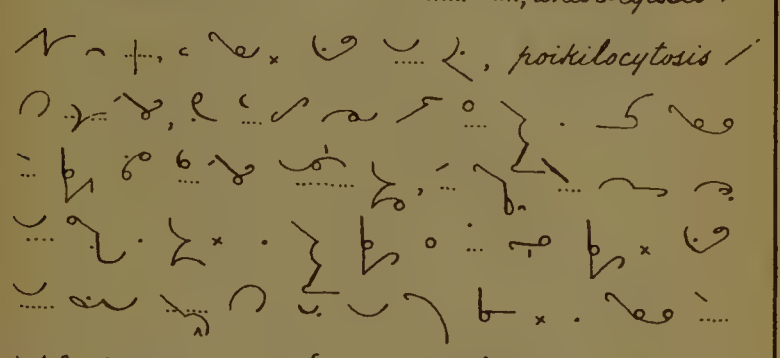
Result in percentages: in number per c.m.

Percentages:			
Polynuclears	up to 70 %	?	c.m. 5600
mast cells	" 1		40
Eosinophiles	" 1		80
lymphocytes	" 20		1600
Large mononuclears	8		600
Transitional cells	1		80

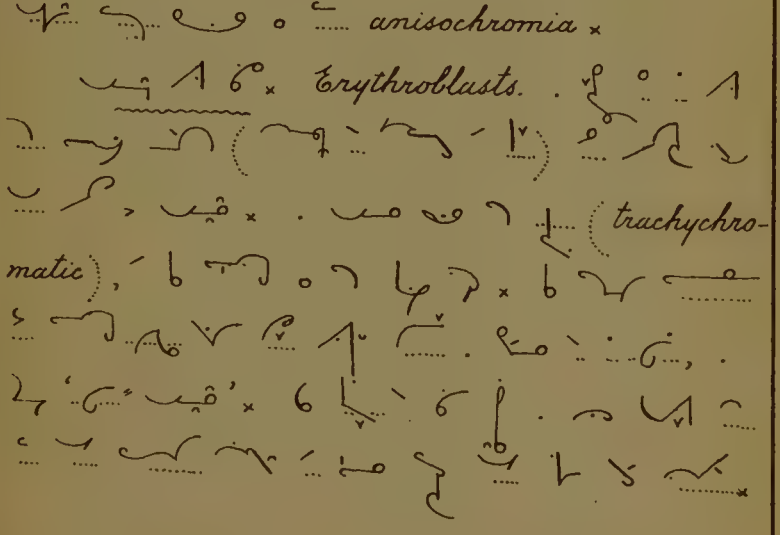


Identification of the Various cells.

a. Red cells. , aniso-cytosis



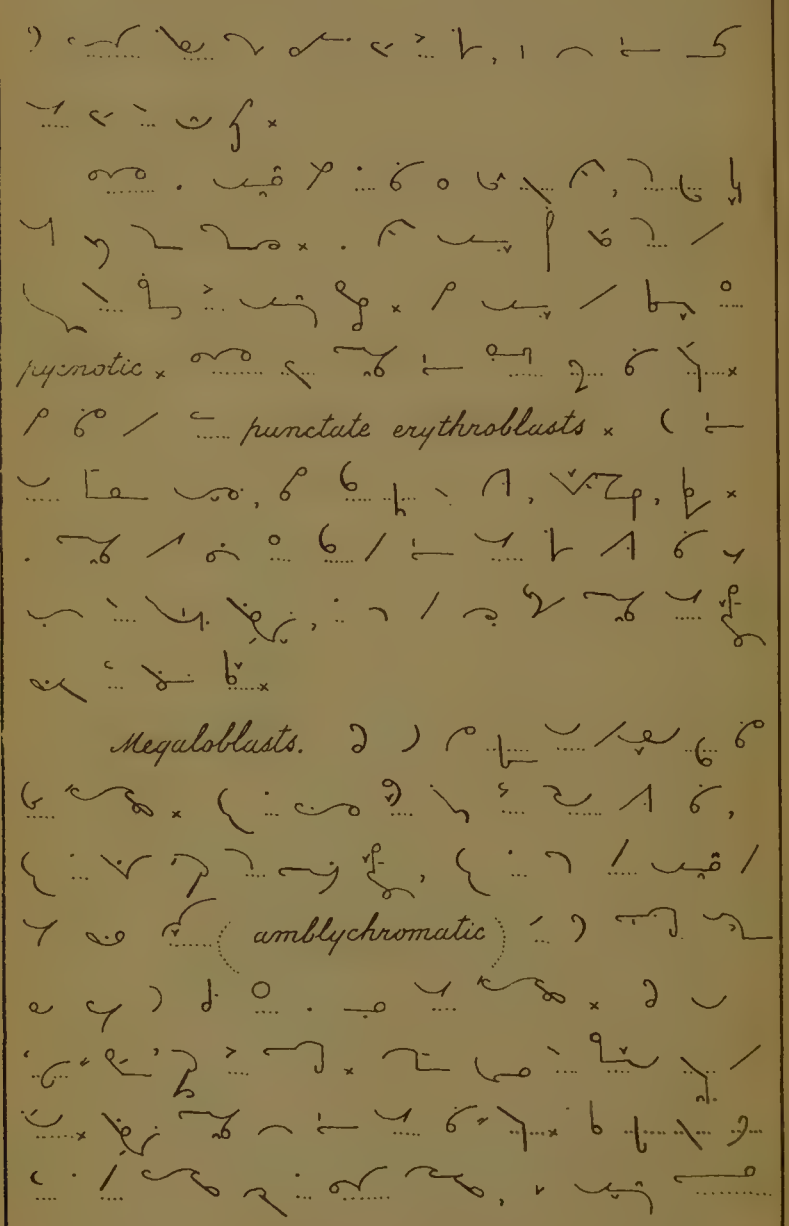
poikilocytosis

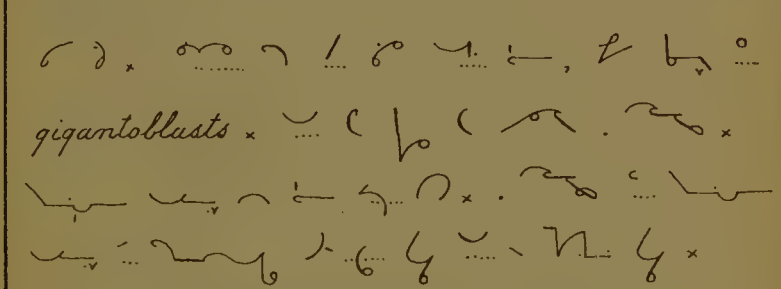


anisochromia

Erythroblasts.

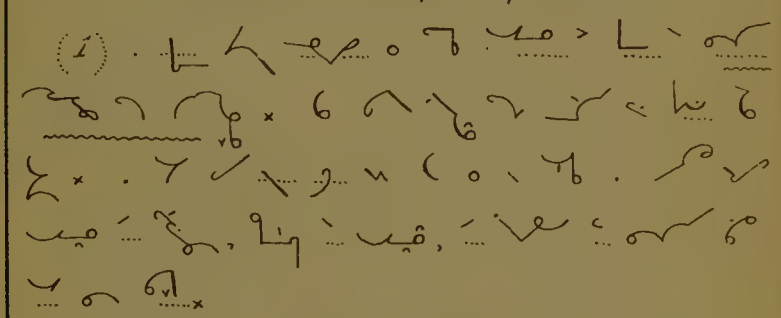
trachychromatic


pycnotic
punctate erythroblasts
Megaloblasts.
amblychromatic



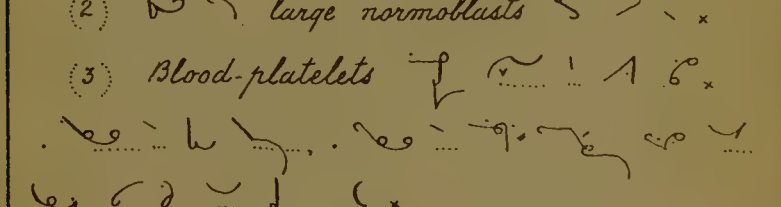
gigantoblasts

Possible errors of diagnosis.

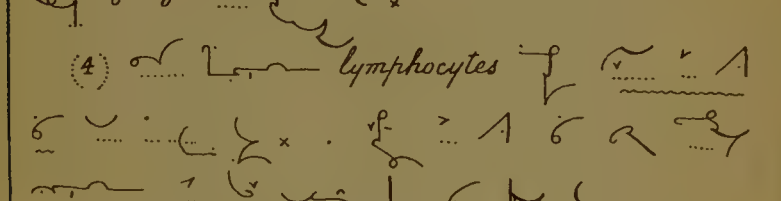


(2) *large normoblasts*

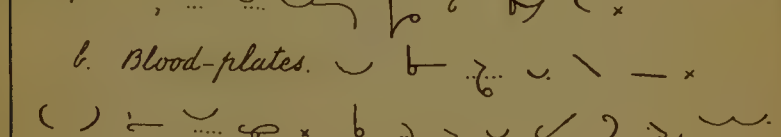
(3) *Blood-platelets*

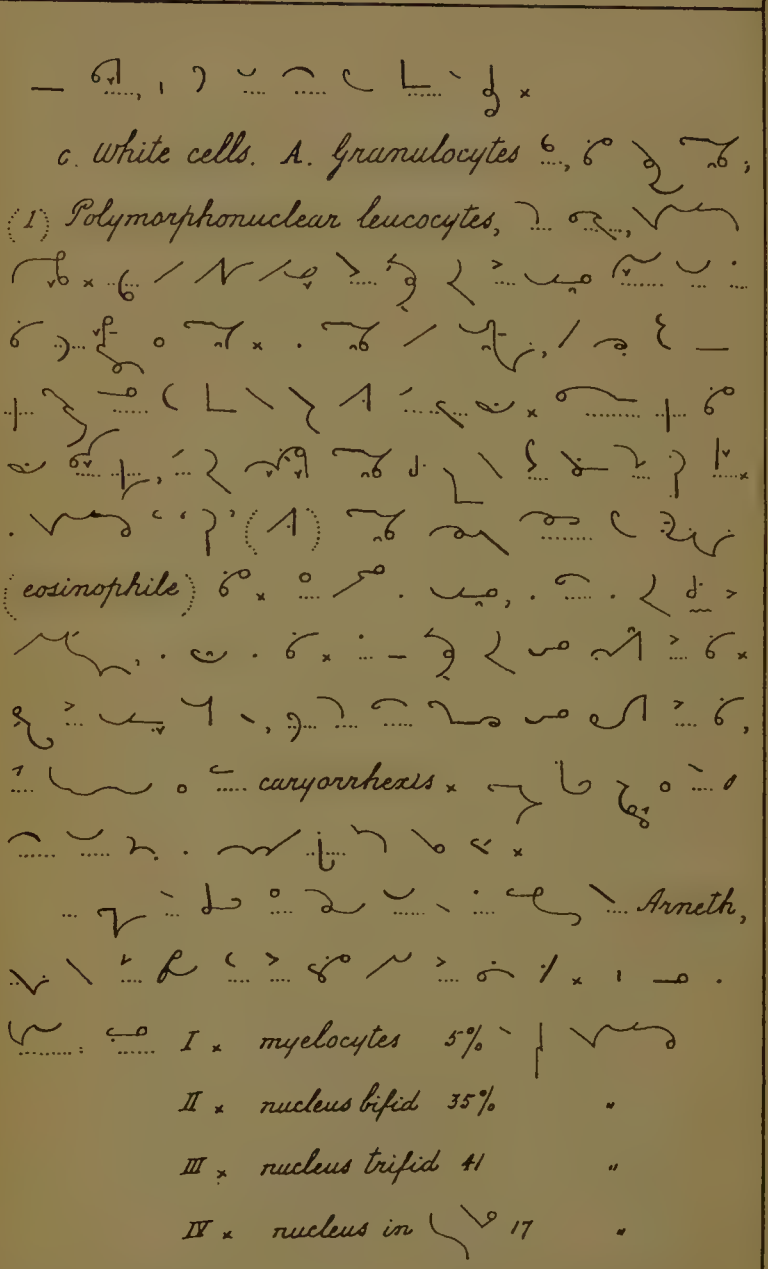


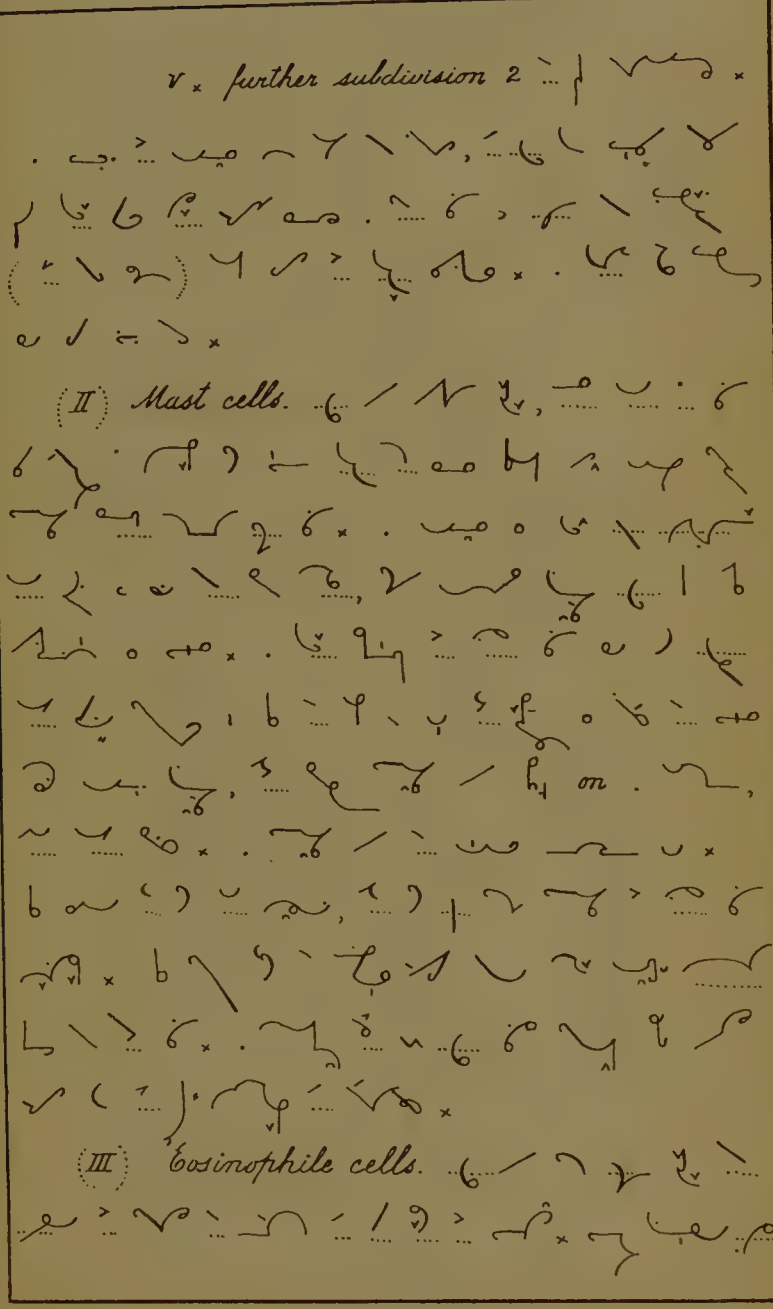
(4) *lymphocytes*

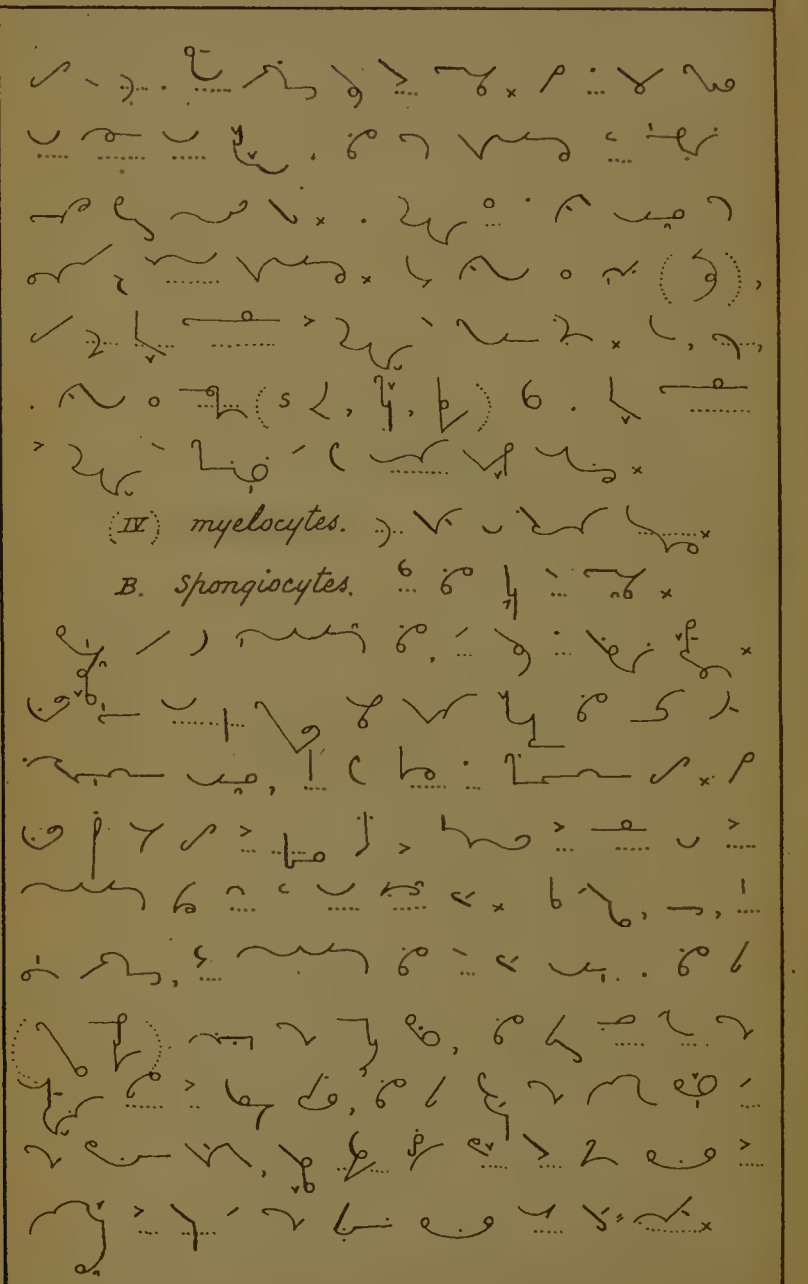


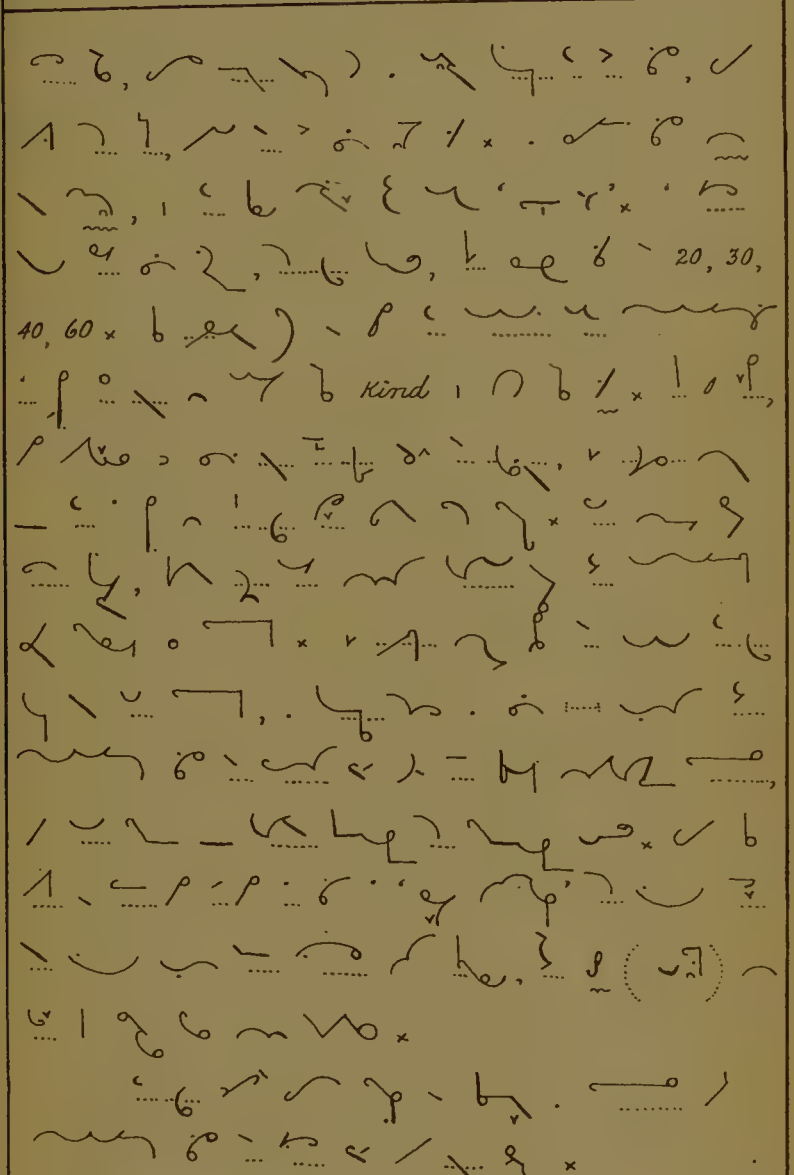
b. Blood-plates.




c. White cells. A. Granulocytes
(1) Polymorphonuclear leucocytes,
(eosinophile)
caryorrhexis
Arneth,
I × myelocytes 5%
II × nucleus bifid 35%
III × nucleus trifid 41
IV × nucleus in 17




(IV) myelocytes.
B. Spongiocytes.



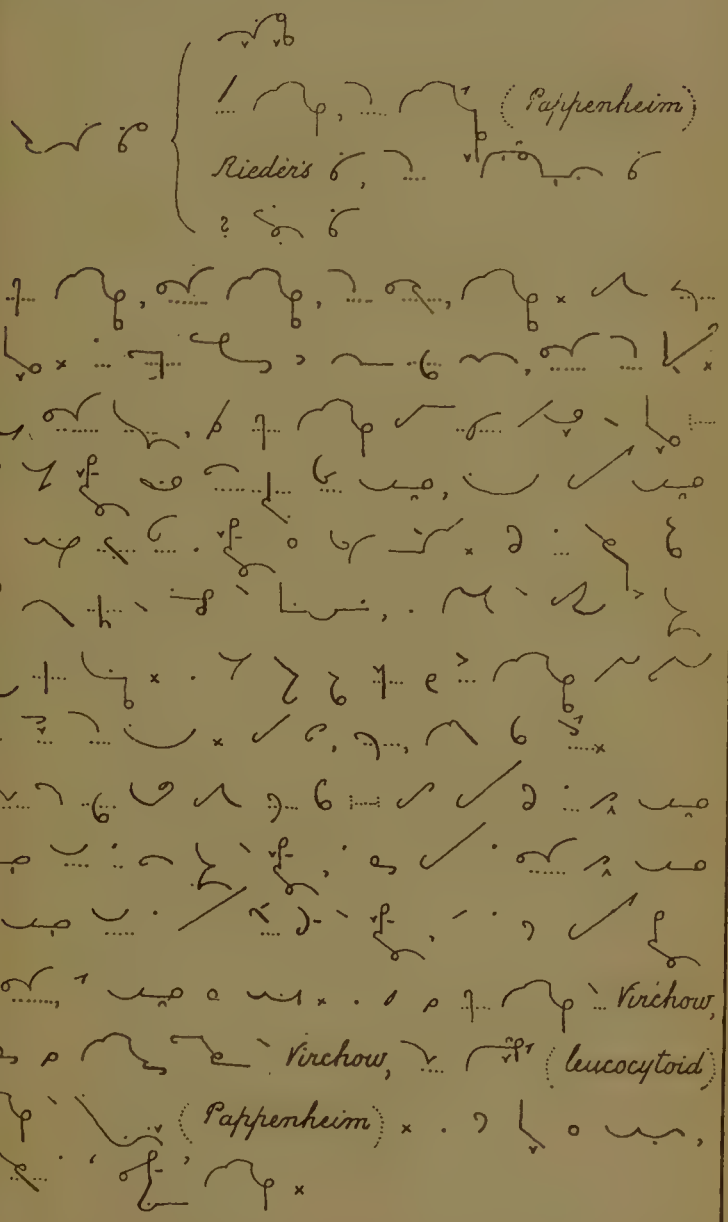
Size of cell.

Cytoplasm,

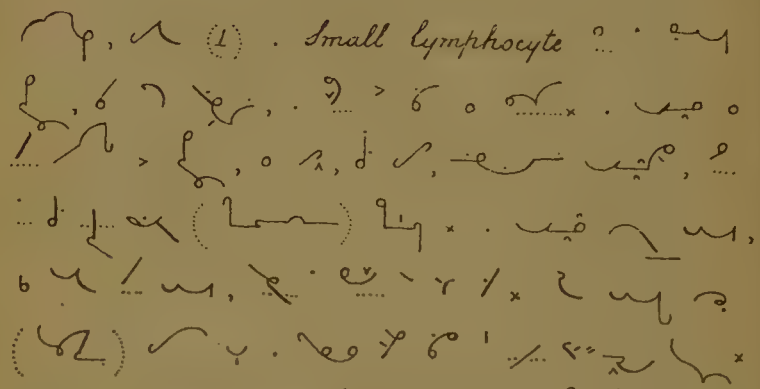
Nucleus,

Nucleolus.

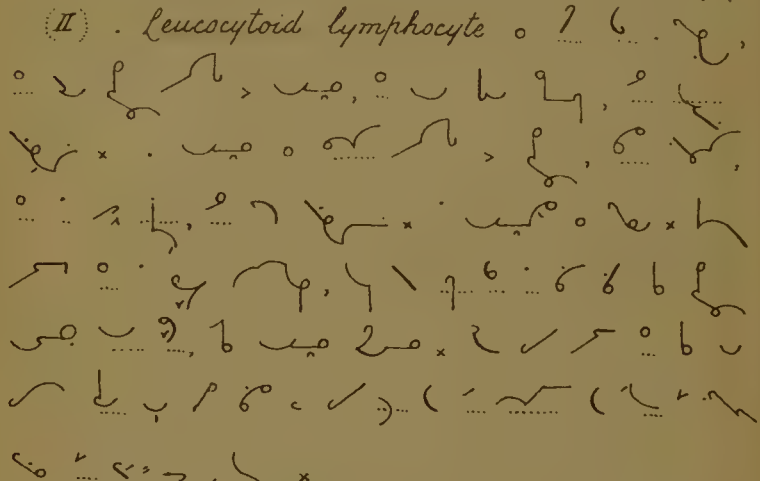
(Pappenheim)


(Pappenheim)
Riedel's
Virchow,
Virchow,
(leucocytoid)
(Pappenheim)

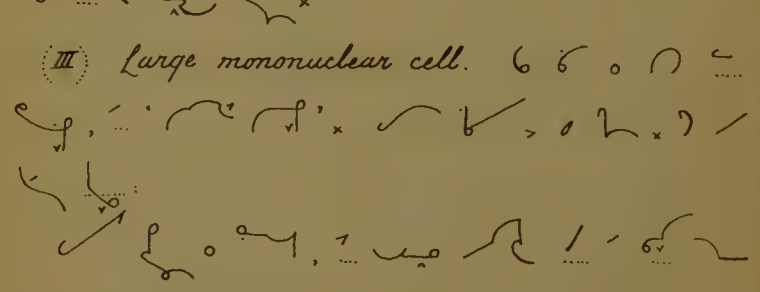
(I). *Small lymphocyte*

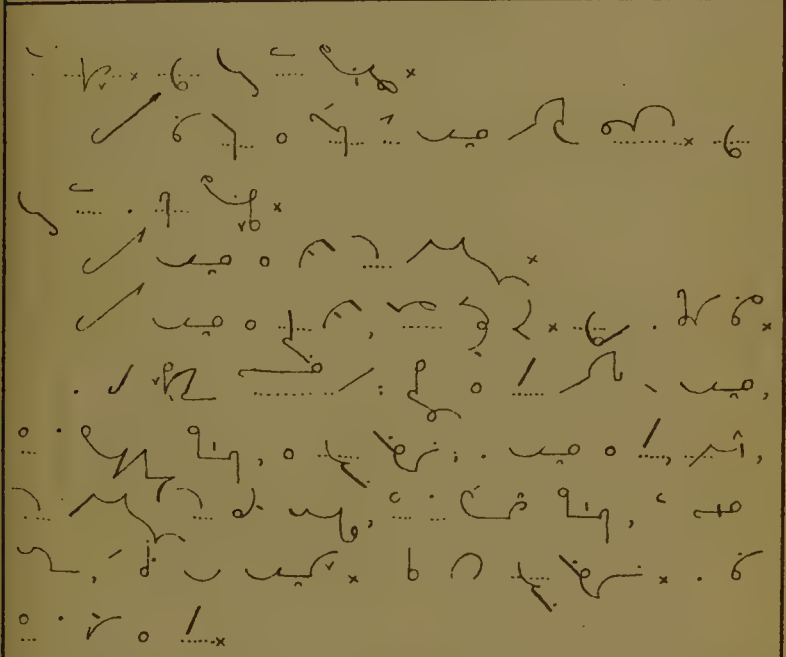


(II). *Leucocytoid lymphocyte*

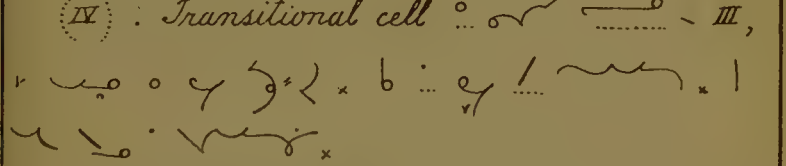


(III) *Large mononuclear cell.*

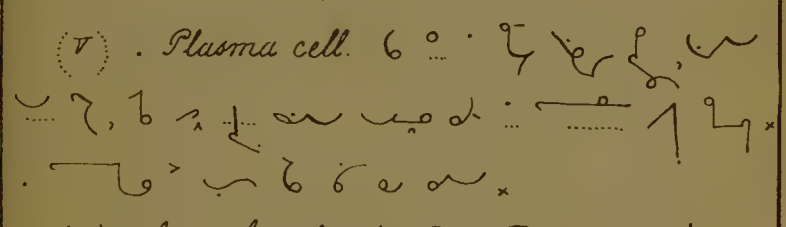




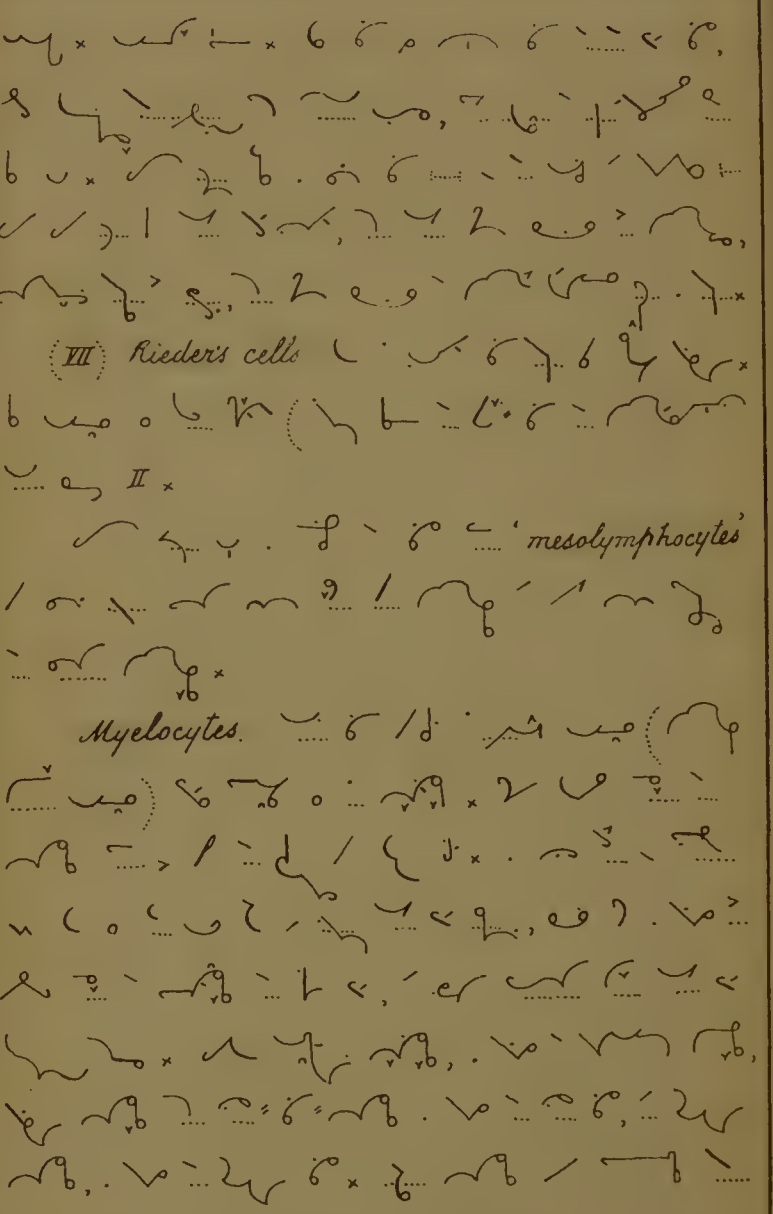
(IV). *Transitional cell* III,

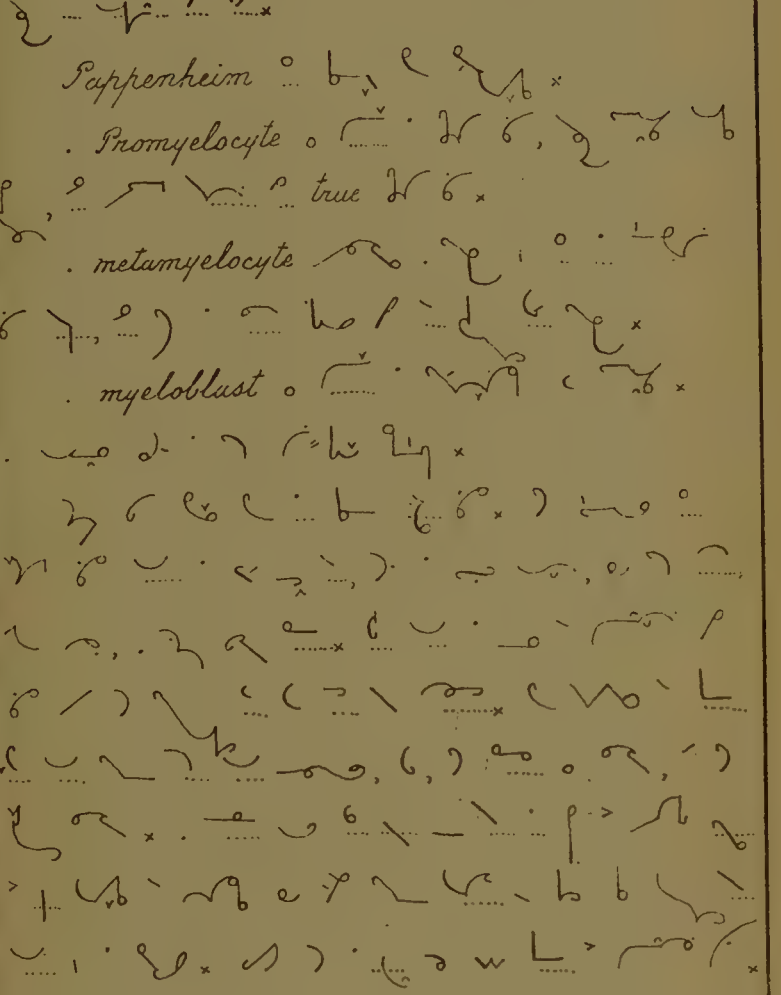


(V). *Plasma cell.*



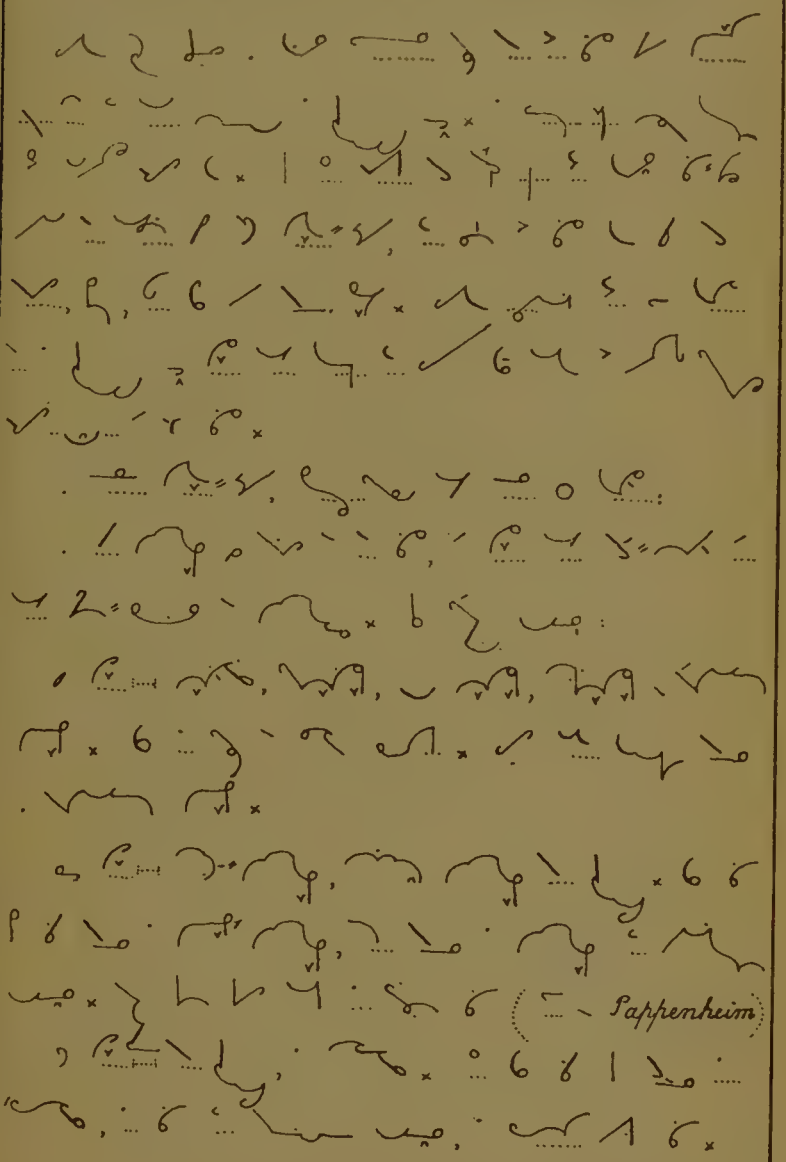
(VI). *Large lymphocyte*

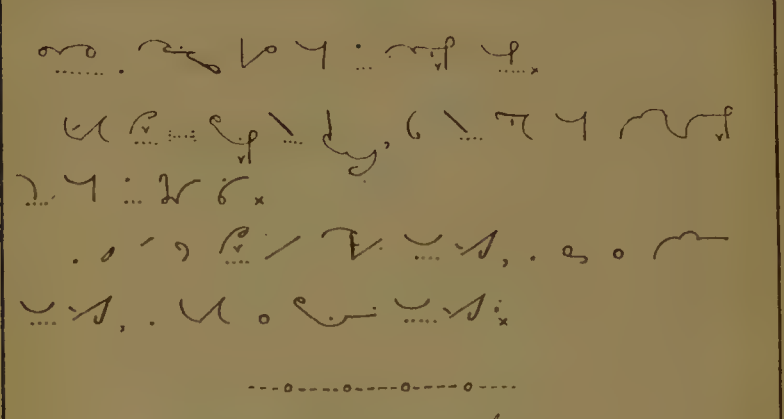

(VII) Rieder's cells
II
'mesolymphocytes'
Myelocytes.



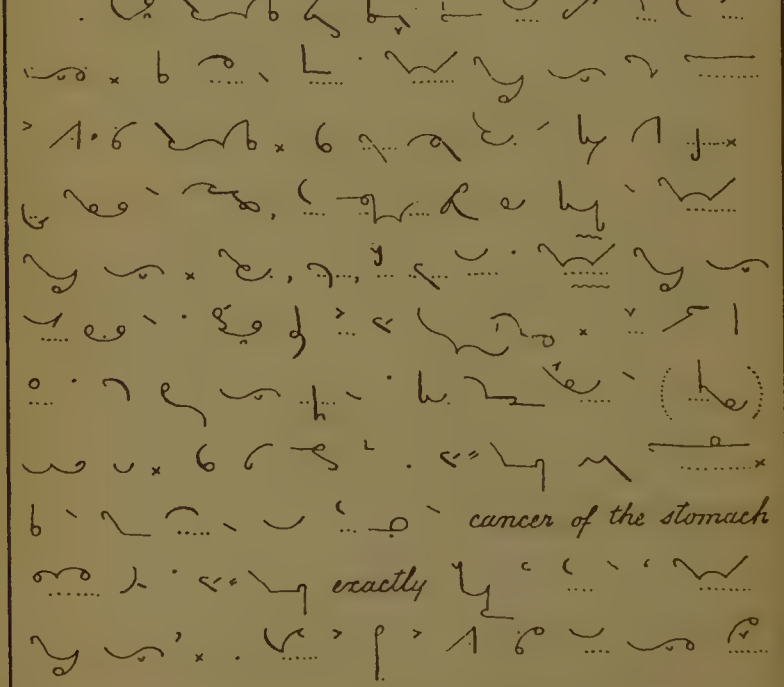
| | | |

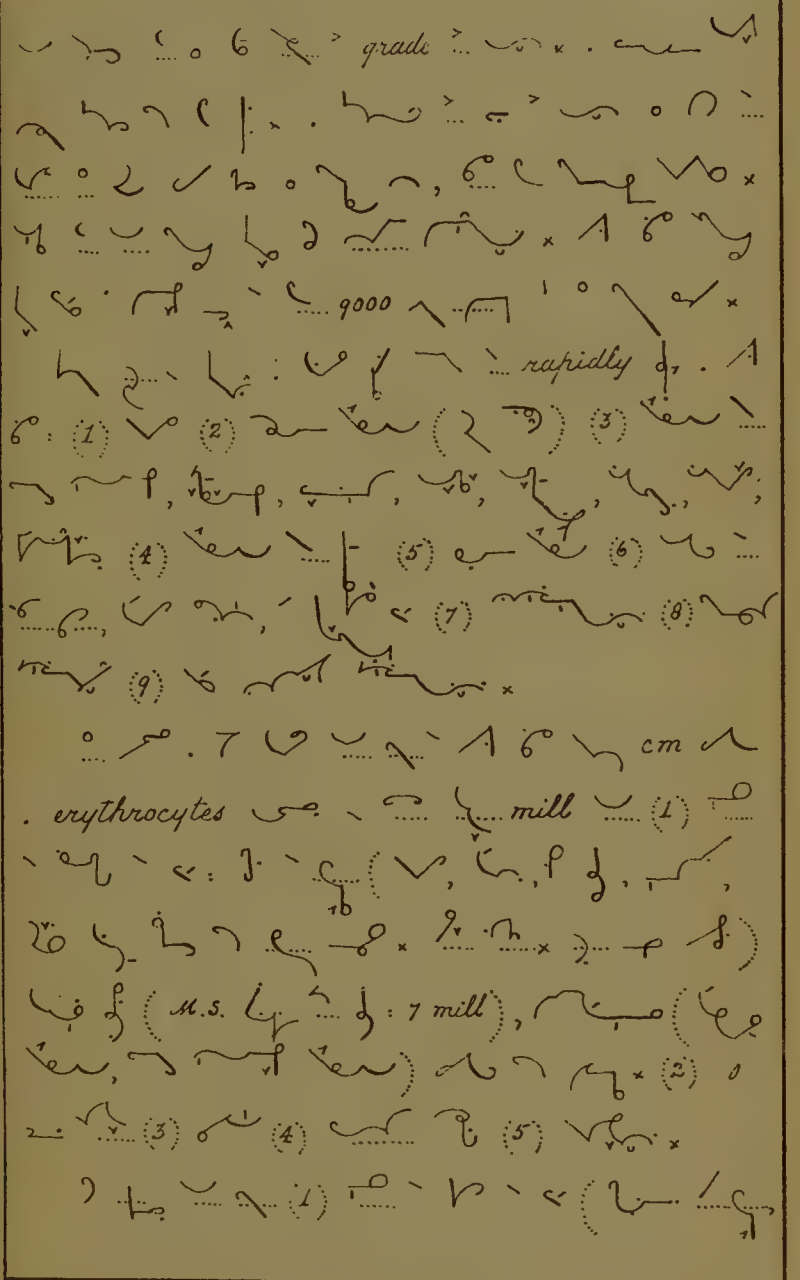
Genesis of the cells of the Blood-stream.

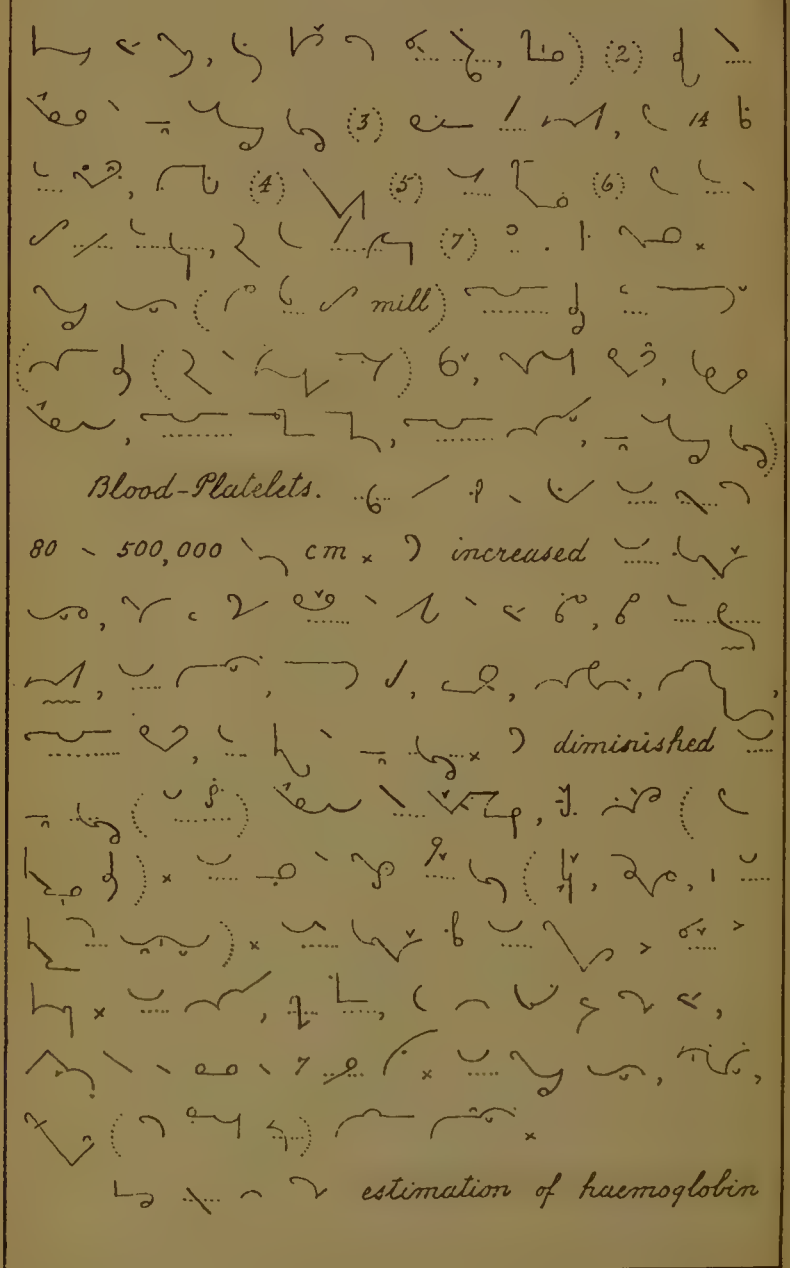


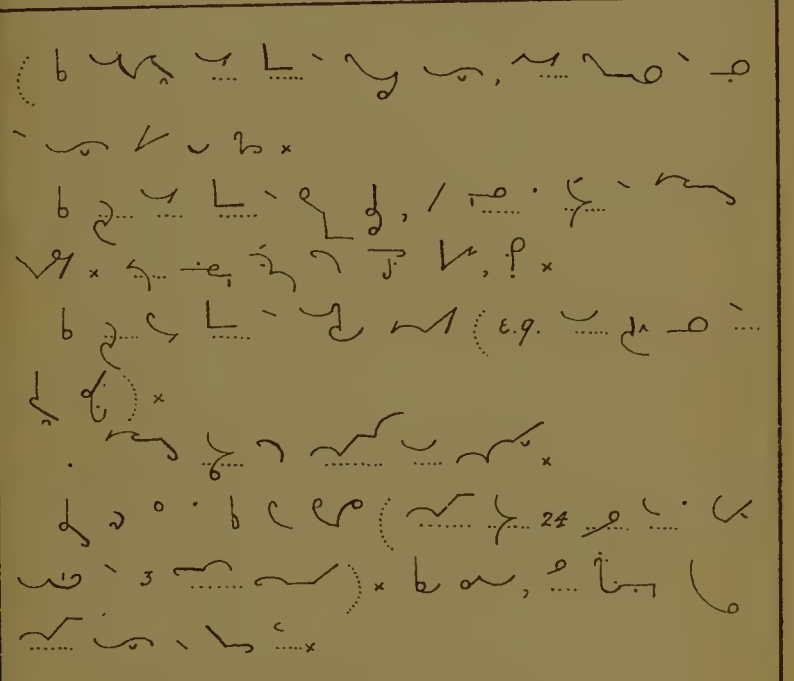


Clinical Diagnosis based on Abnormalities of the Red cells.

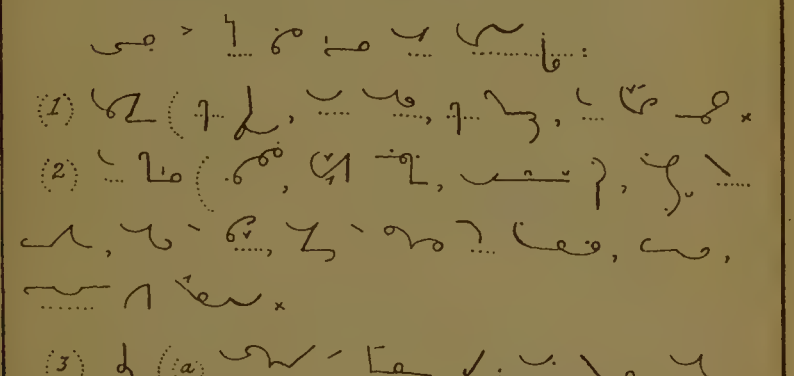


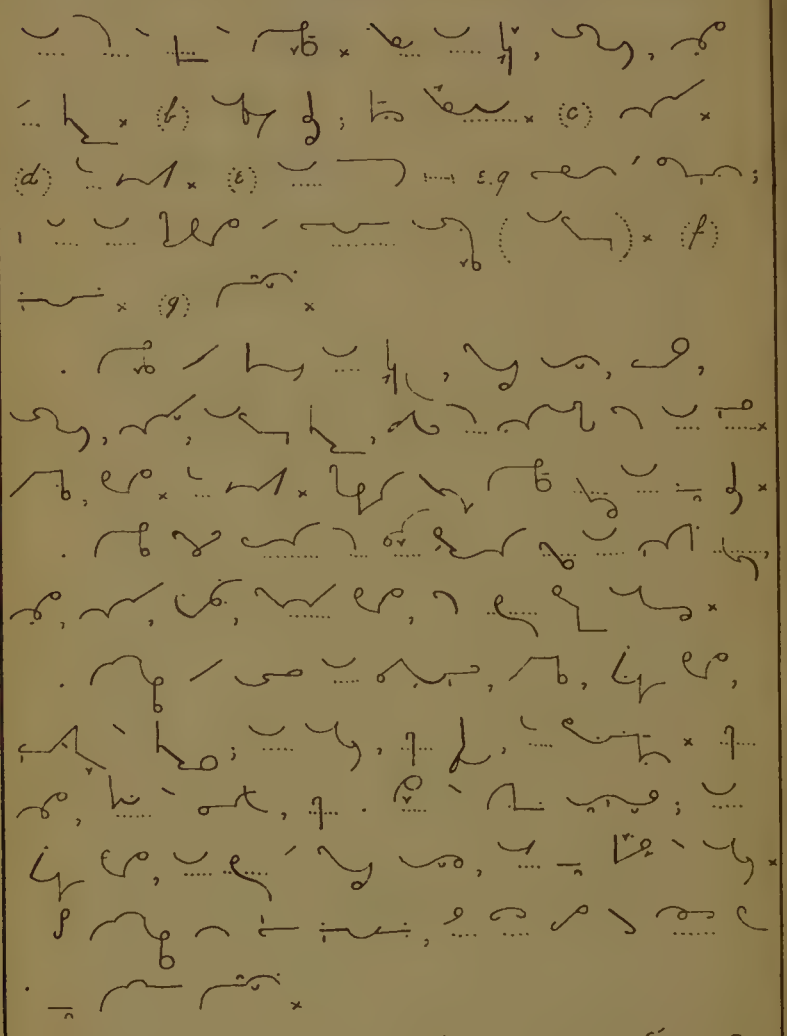

grade
9000
rapidly
(1)
(2)
(3)
(4)
(5)
(6)
(7)
(8)
(9)
cm
erythrocytes
mill
M.S.
7 mill
(1)
(2)
(3)
(4)
(5)
(1)


Blood-Platelets.
80 - 500,000
increased
diminished
estimation of haemoglobin



Clinical Diagnosis based on abnormalities of the white cells.





. *Large mononuclears* / v. *Jaksch's*

. *Eosinophiles* /

prognosis : .

Mast cells /

Deductions to be made from observations of degenerative changes in Leucocytes.

caryorrhexis

caryorrhectic

Glossary of Terms used in connection with Haematology.

amblychromatic,

anisochromia.

anisocytosis.

Basophilia. (1)

(2)

Caryorrhexis.

Erythroblast.

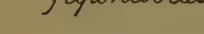
Granulocyte.

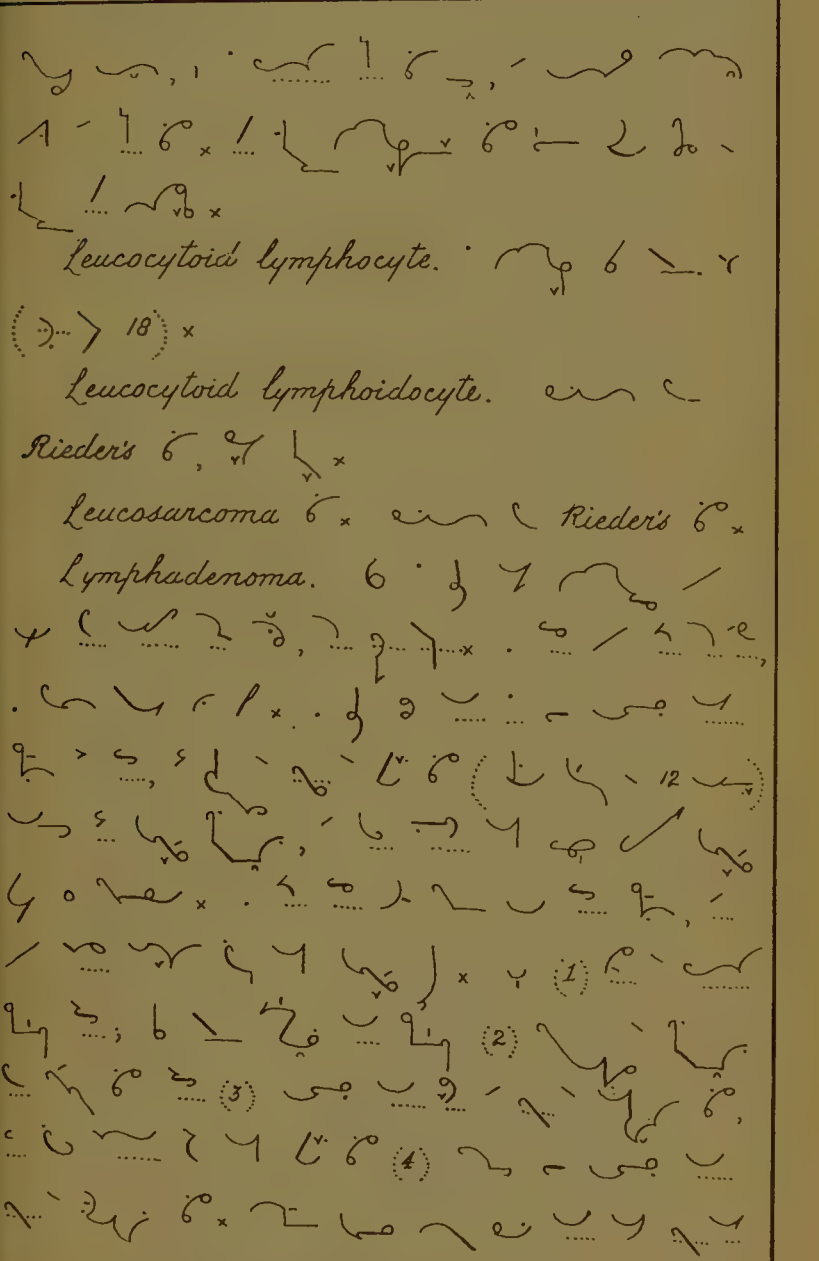
Gigantoblast.

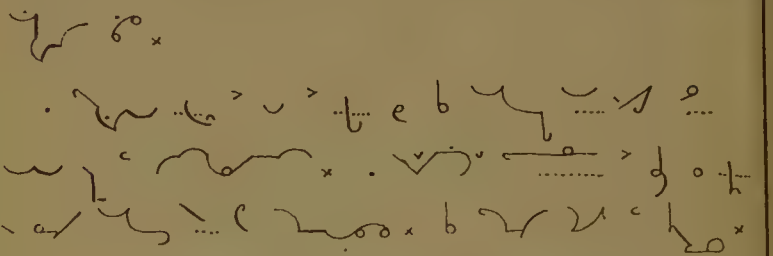
Large Lymphocyte.

Leucaemia.

Leucanaemia.

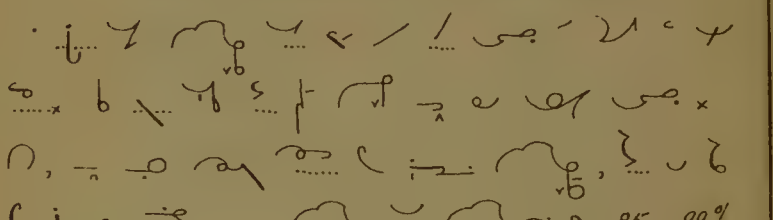


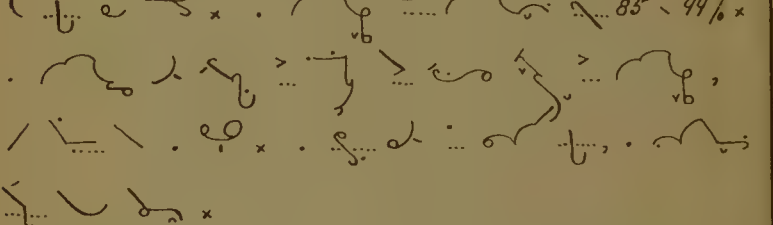




Lymphatic leucaemia. Synonyms:

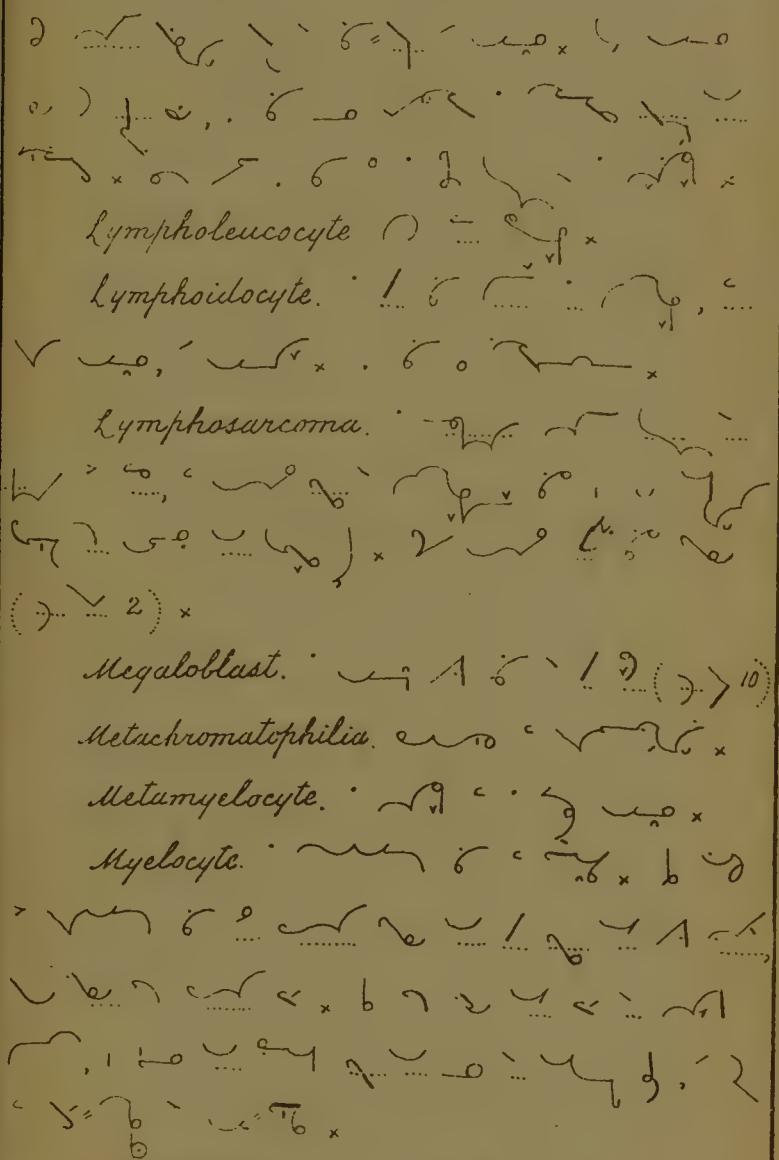
acute lymphaemia, lymphocythaemia.

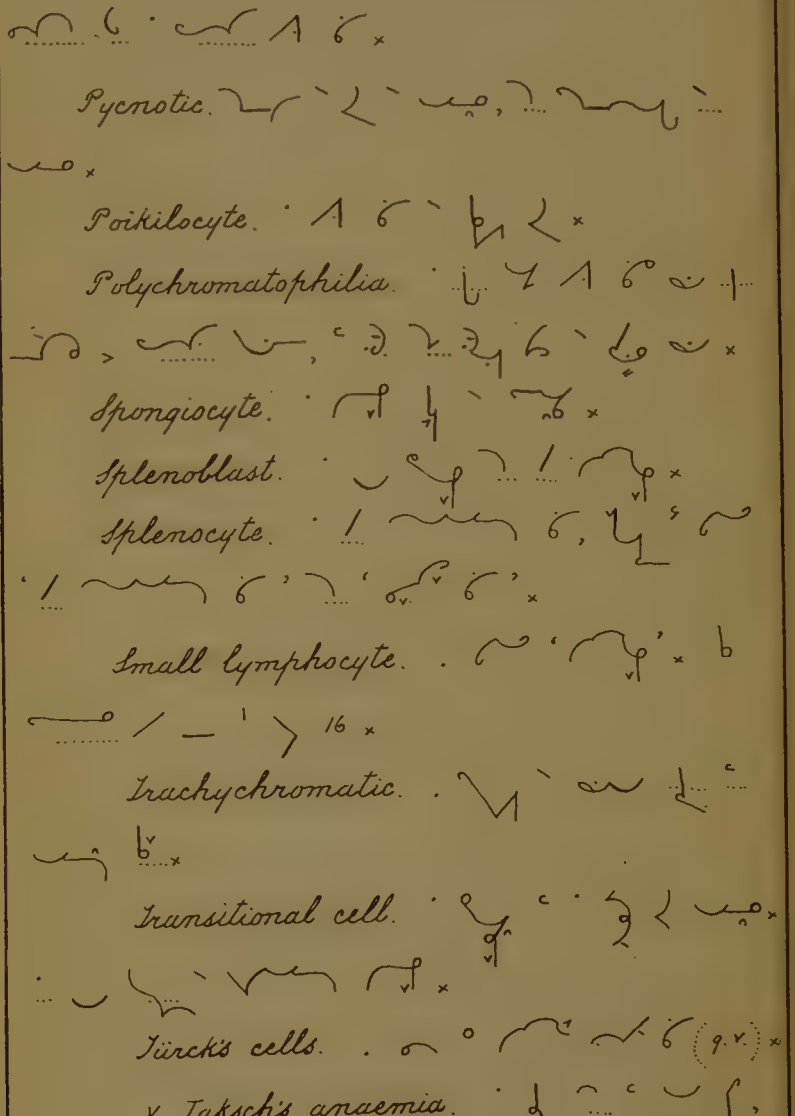


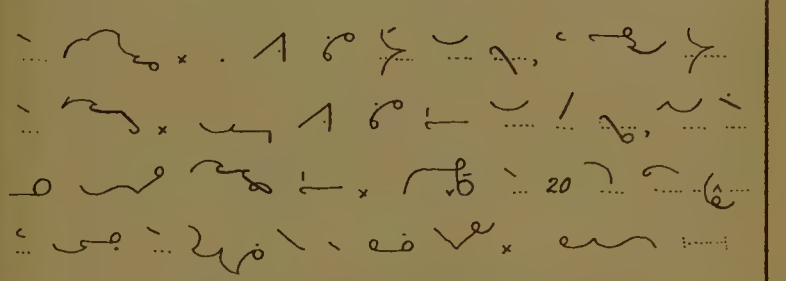


Lymphoid marrow cell. Türck

Lymphoid leucocyte.


Lympholeucocyte
Lymphoidocyte.
Lymphosarcoma.
Megaloblast.
Metachromatophilia.
Metamyelocyte.
Myelocyte.
Normoblast.

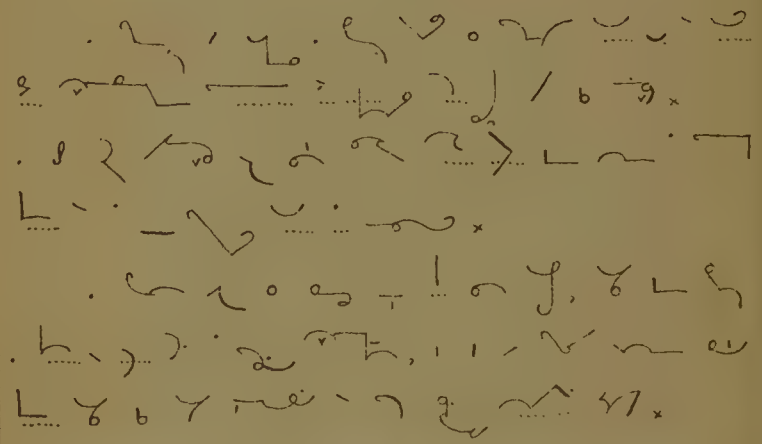

Pycnotic.
Poikilocyte.
Polychromatophilia.
Spongiocyte.
Splenoblast.
Splenocyte.
Small lymphocyte.
16
Trachychromatic.
Transitional cell.
Türck's cells.
(q.v.)
v. Jaksch's anaemia.



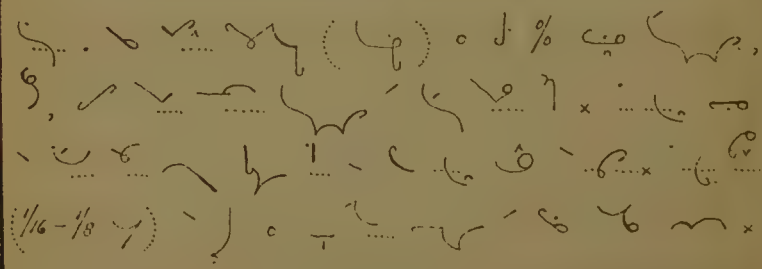
anaemia infantum pseudo-leukaemica ×

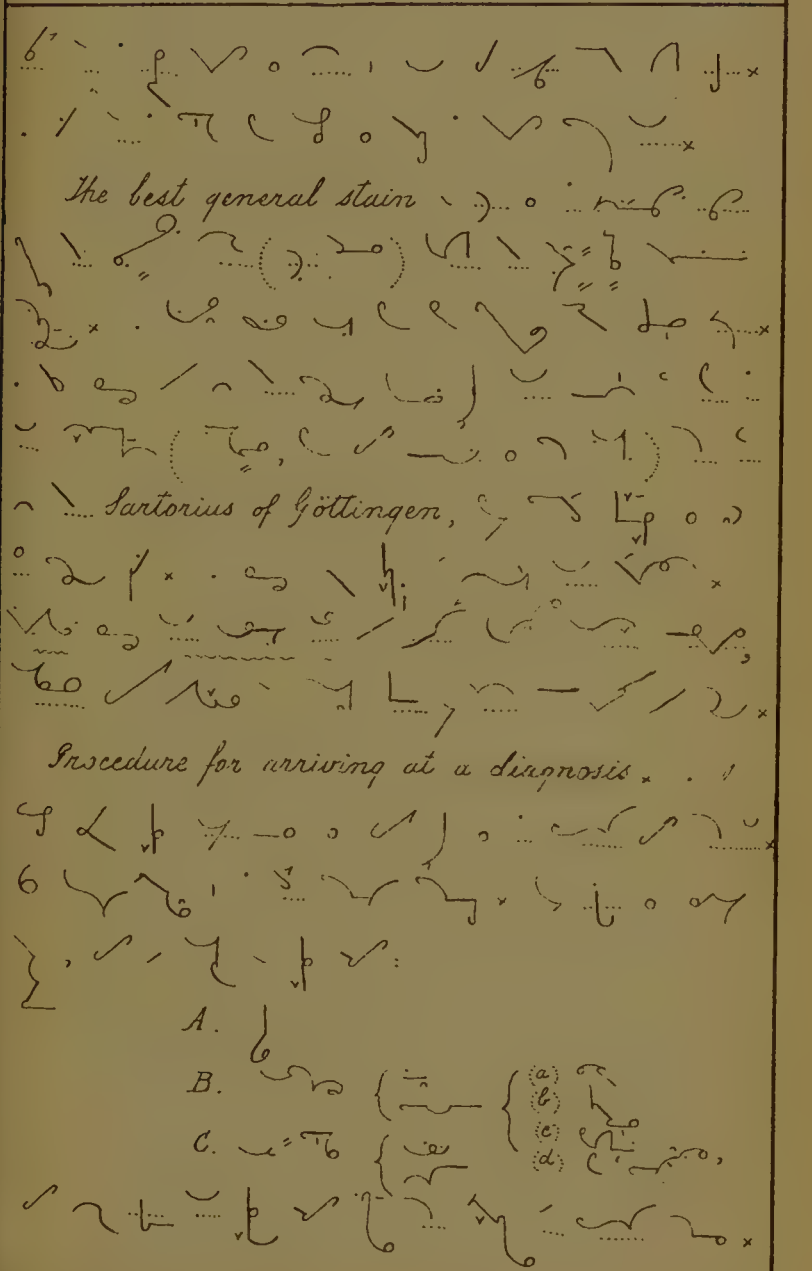
SECTION II.

THE DIAGNOSIS OF MORBID TISSUES.

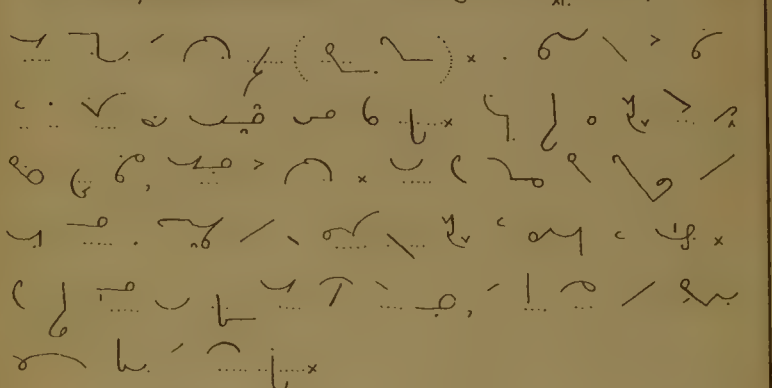


To prepare the tissue for section-cutting,

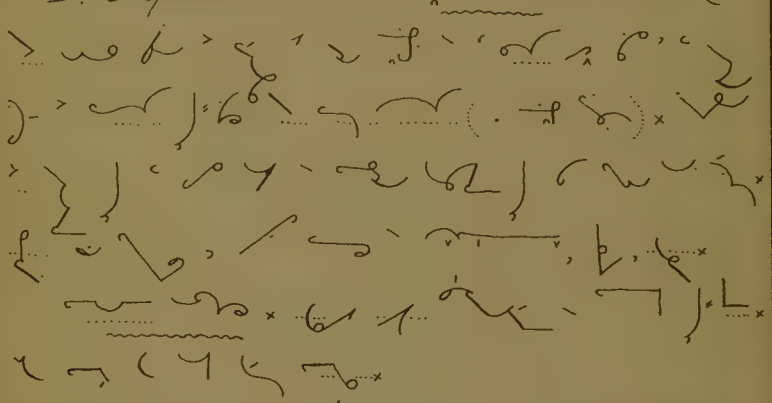



The best general stain
Sartorius of Göttingen,
Procedure for arriving at a diagnosis
A.
B.
C.
(a)
(b)
(c)
(d)

A. Degenerations.

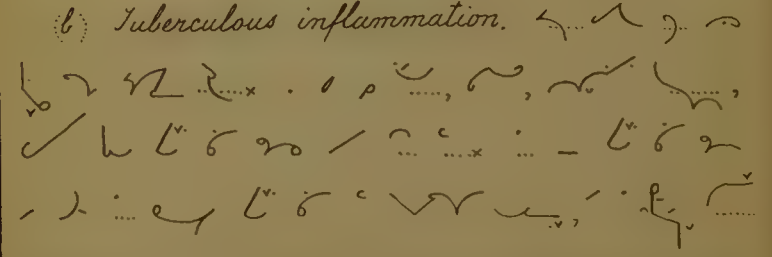


B. Inflammations.

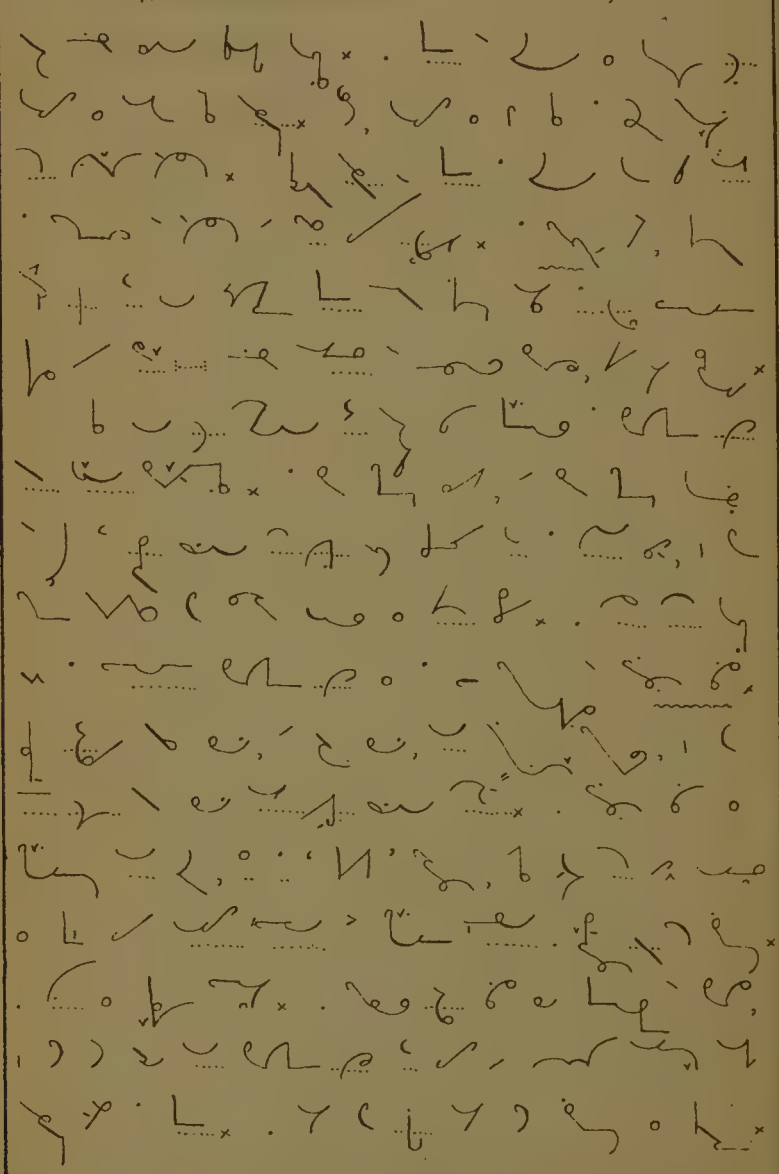


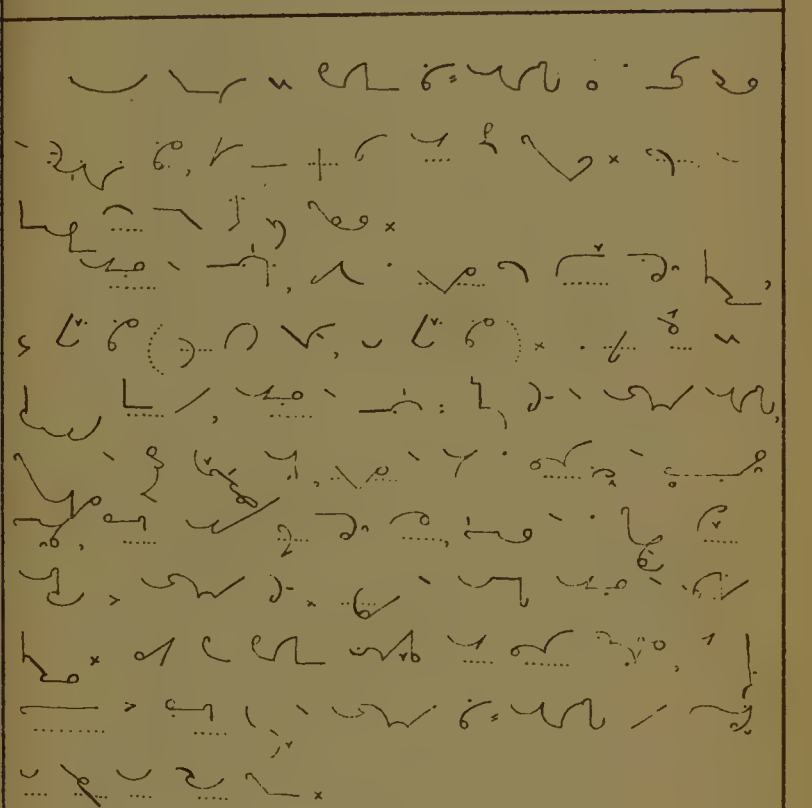
(a) . first

(b) Tuberculous inflammation.



c. *Syphilitic lesions.*

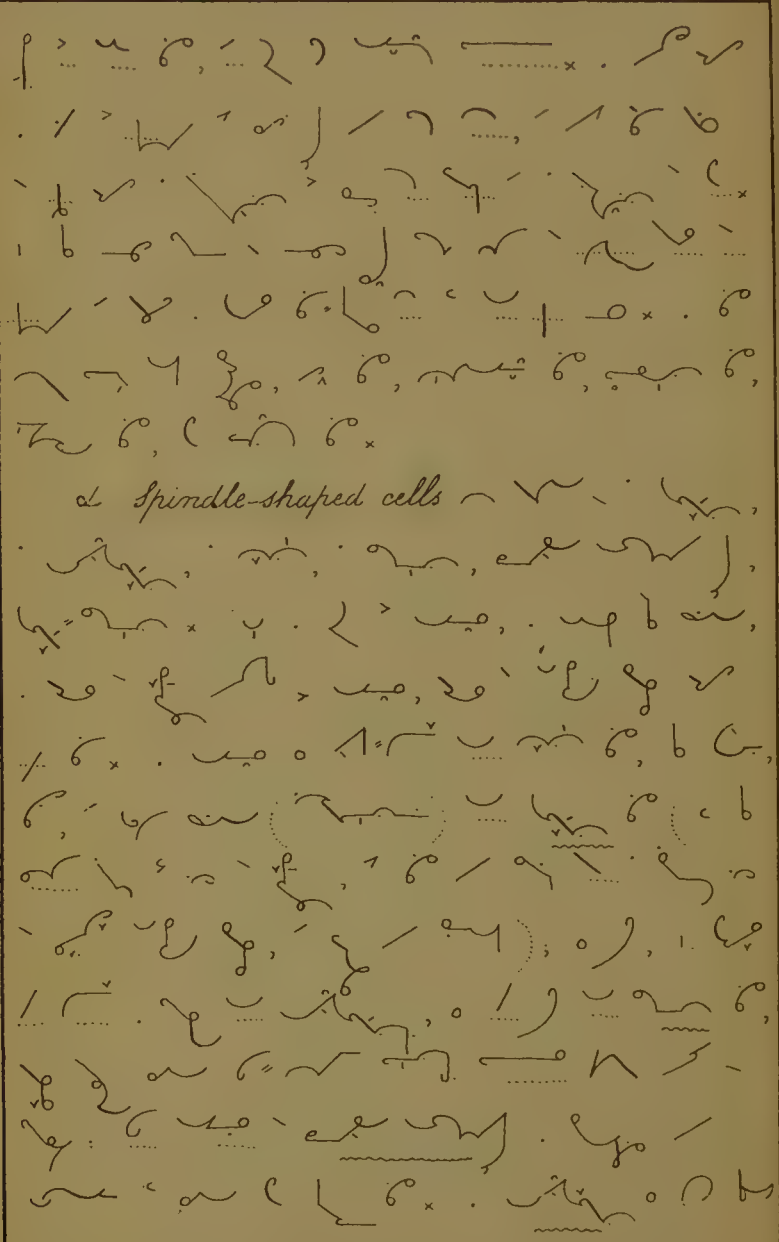


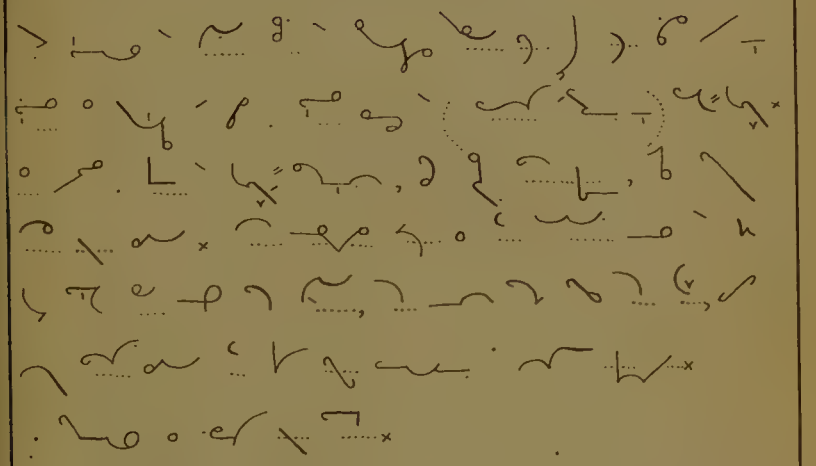


(d) Other granulomas.

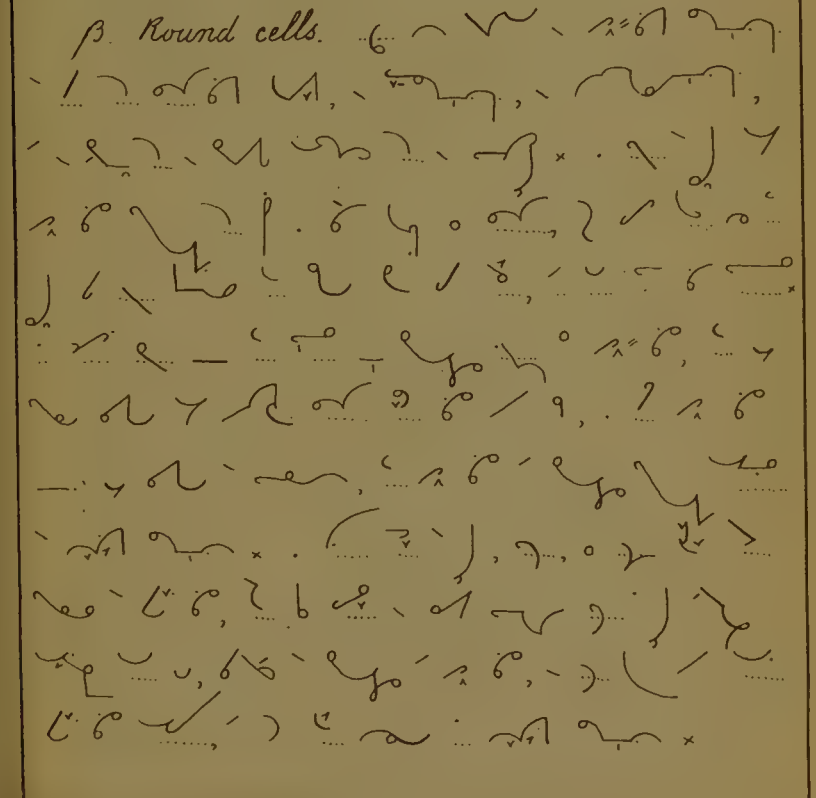
Actinomycotic

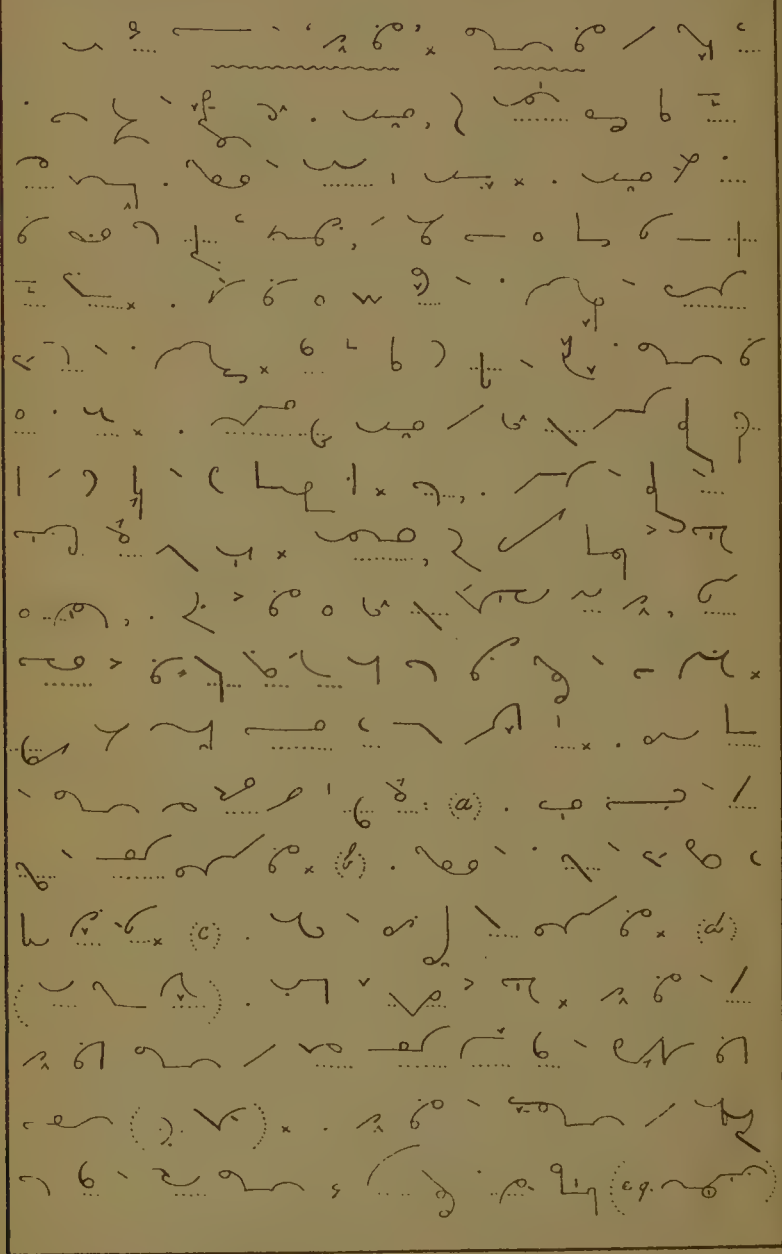
C New-growths.

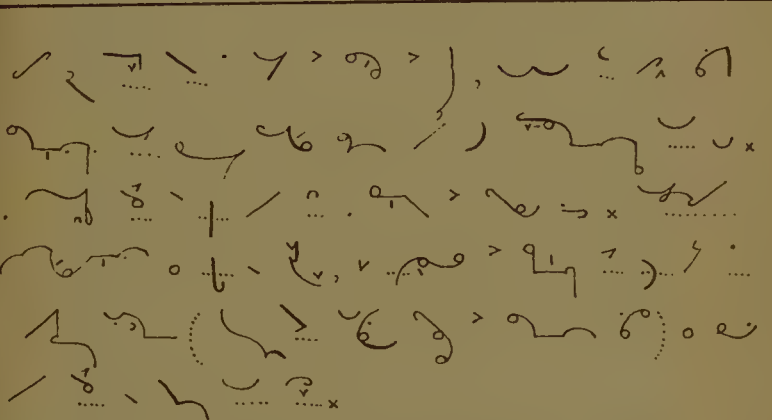




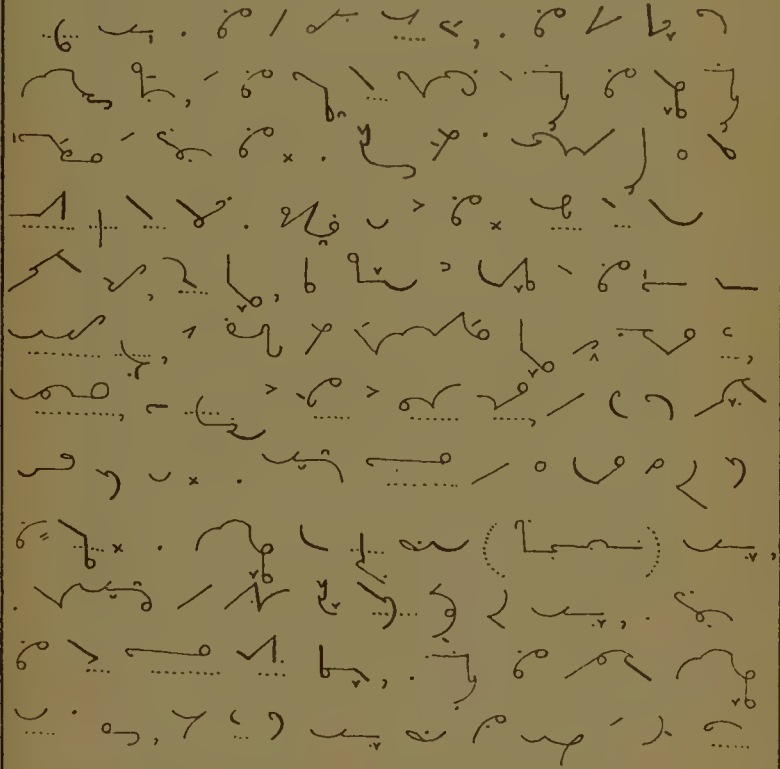
β. Round cells.

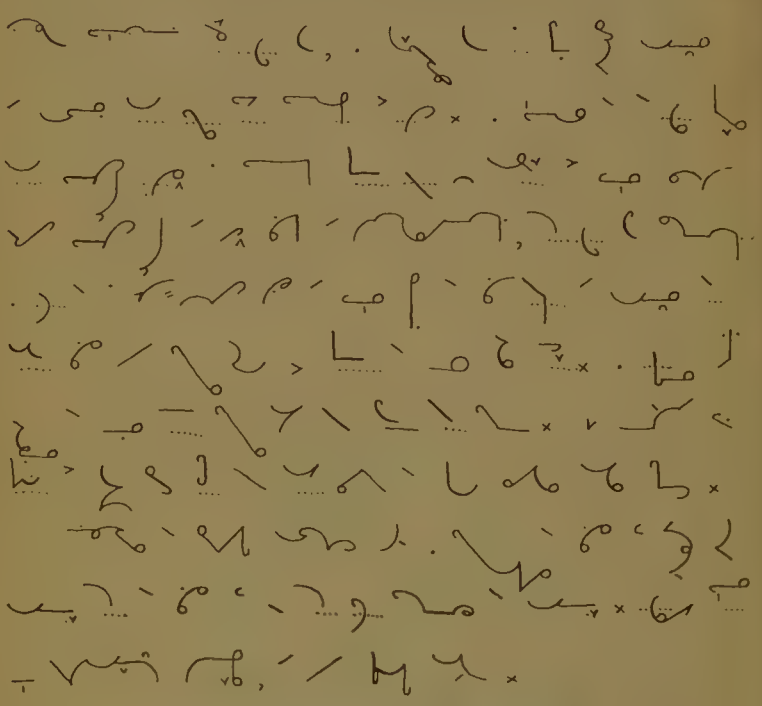




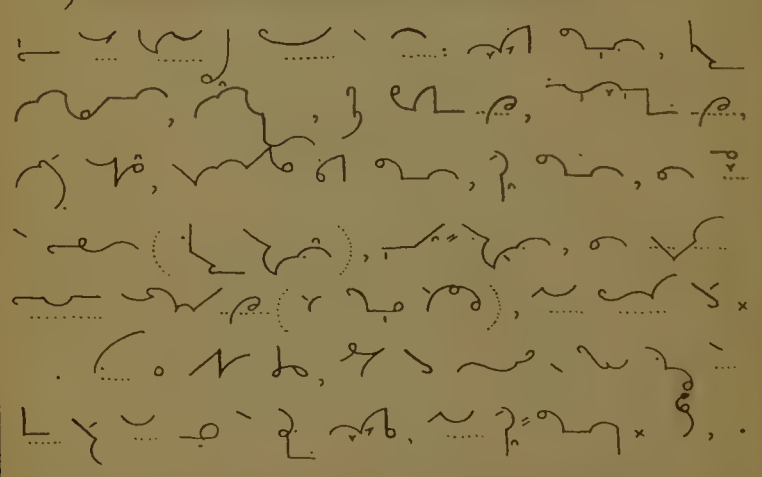


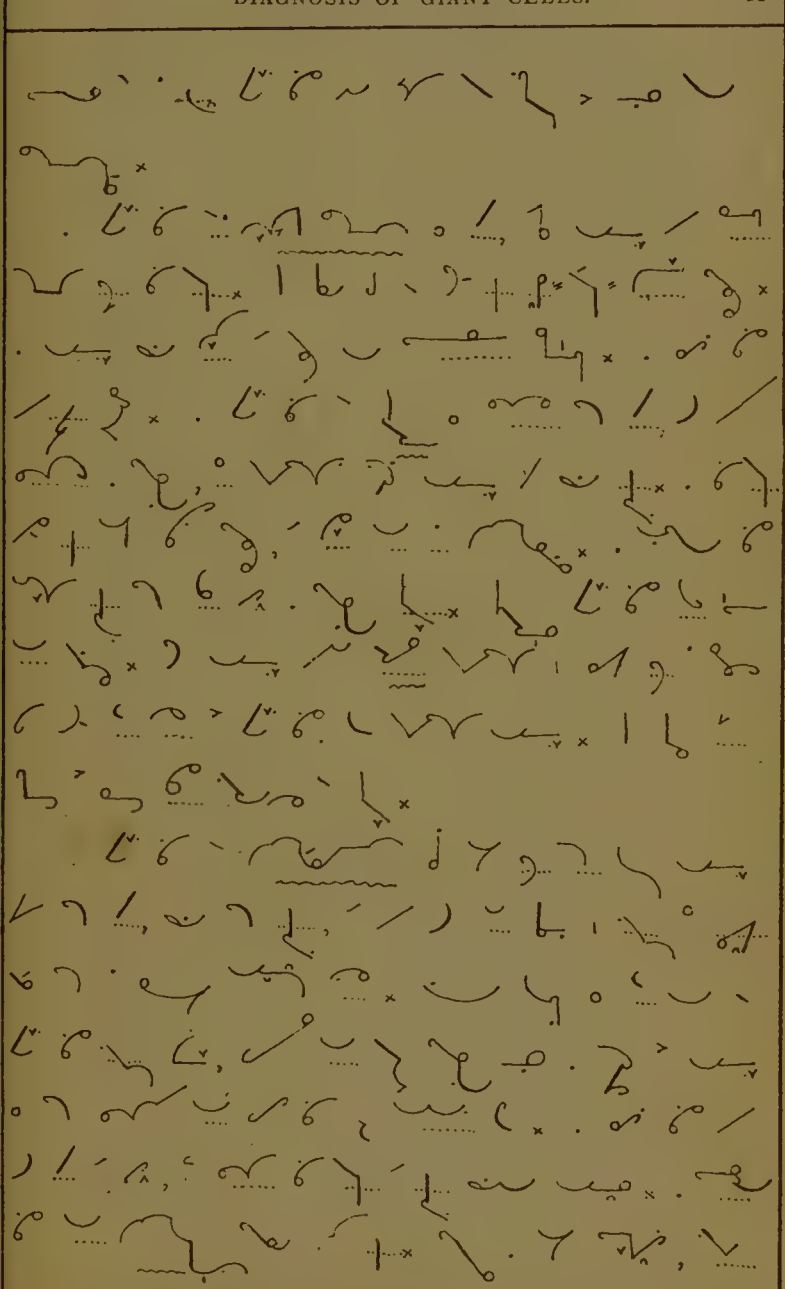
Round cells of inflammatory tissue.

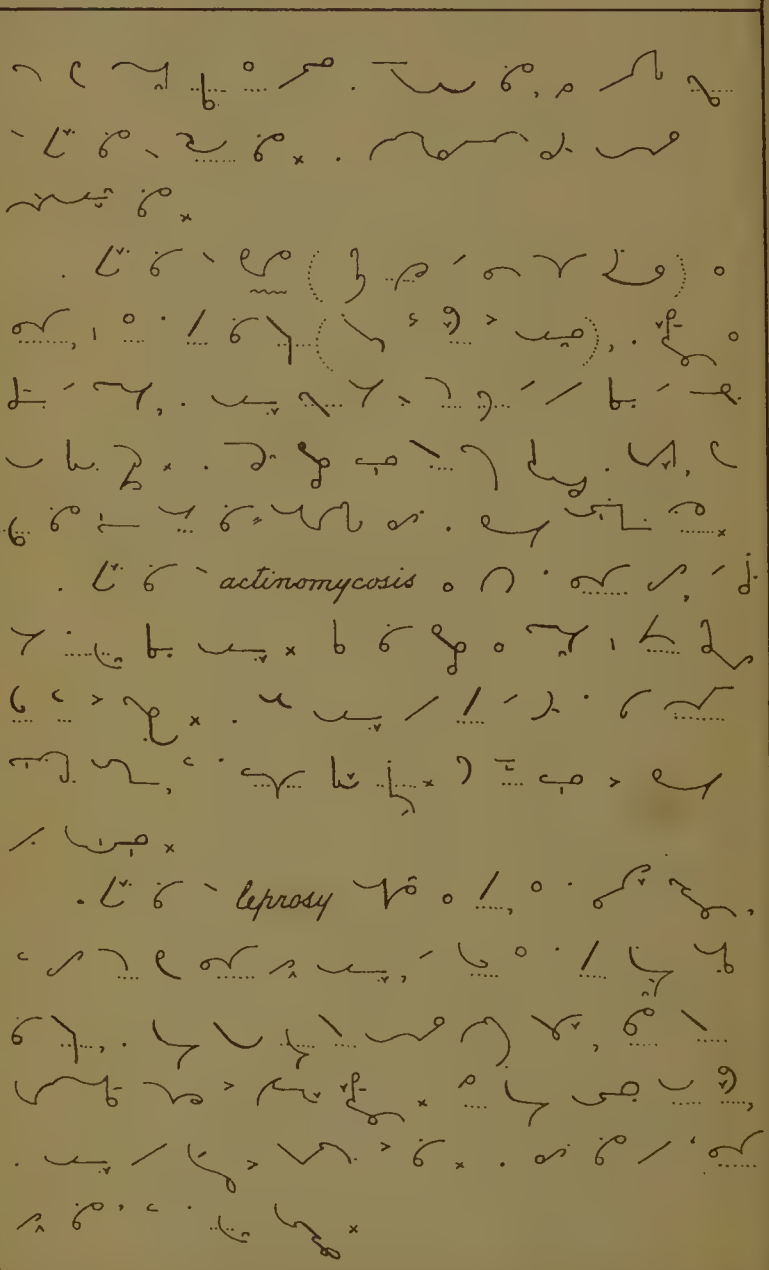


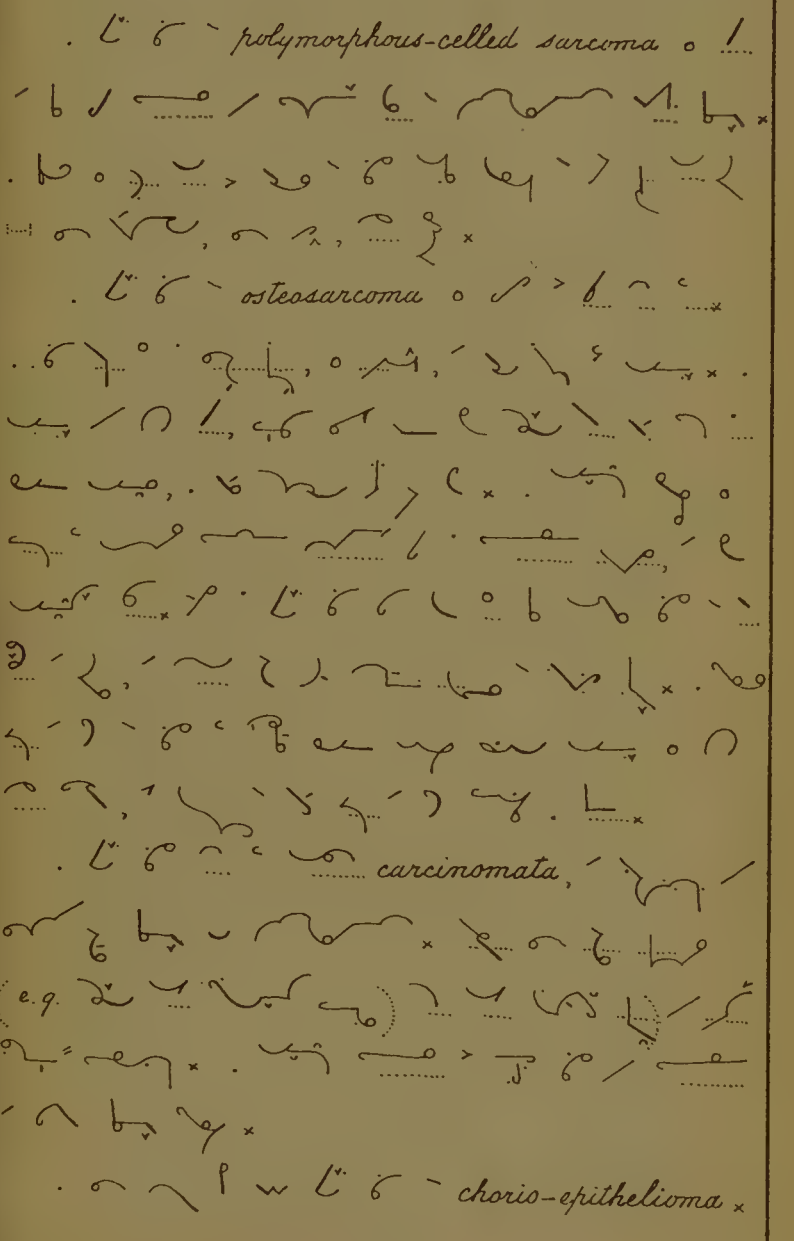


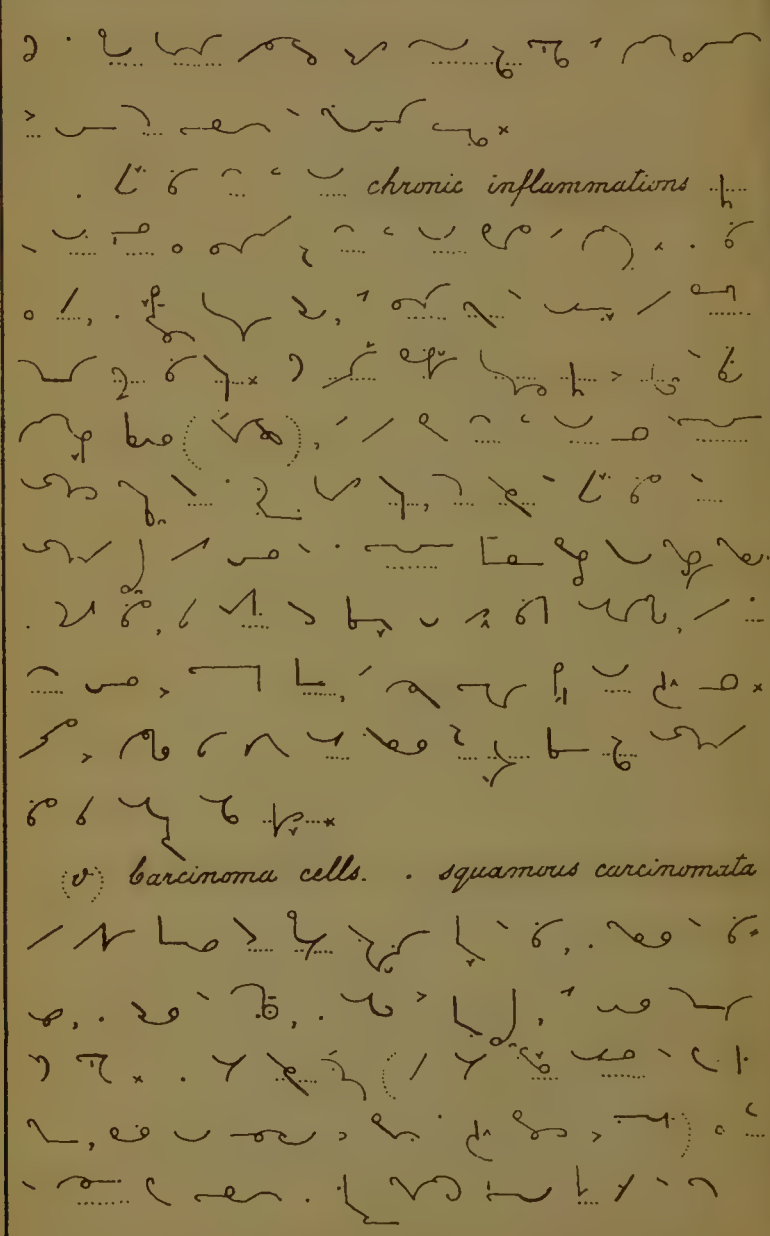
y. Multinucleate cells. Giant cells.



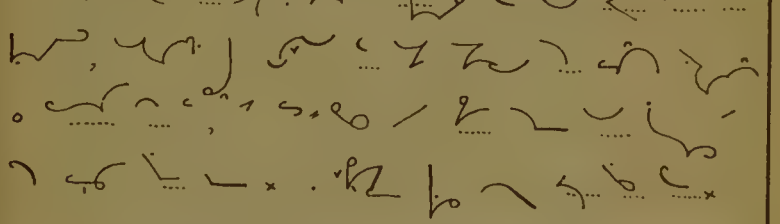




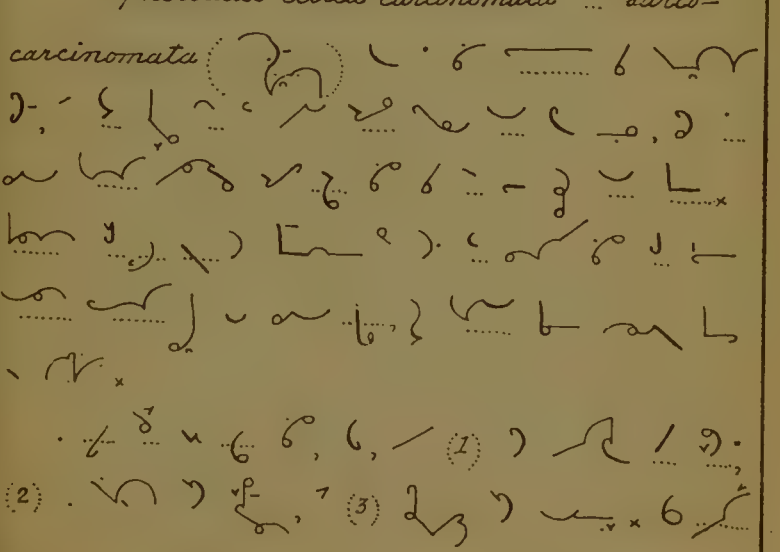


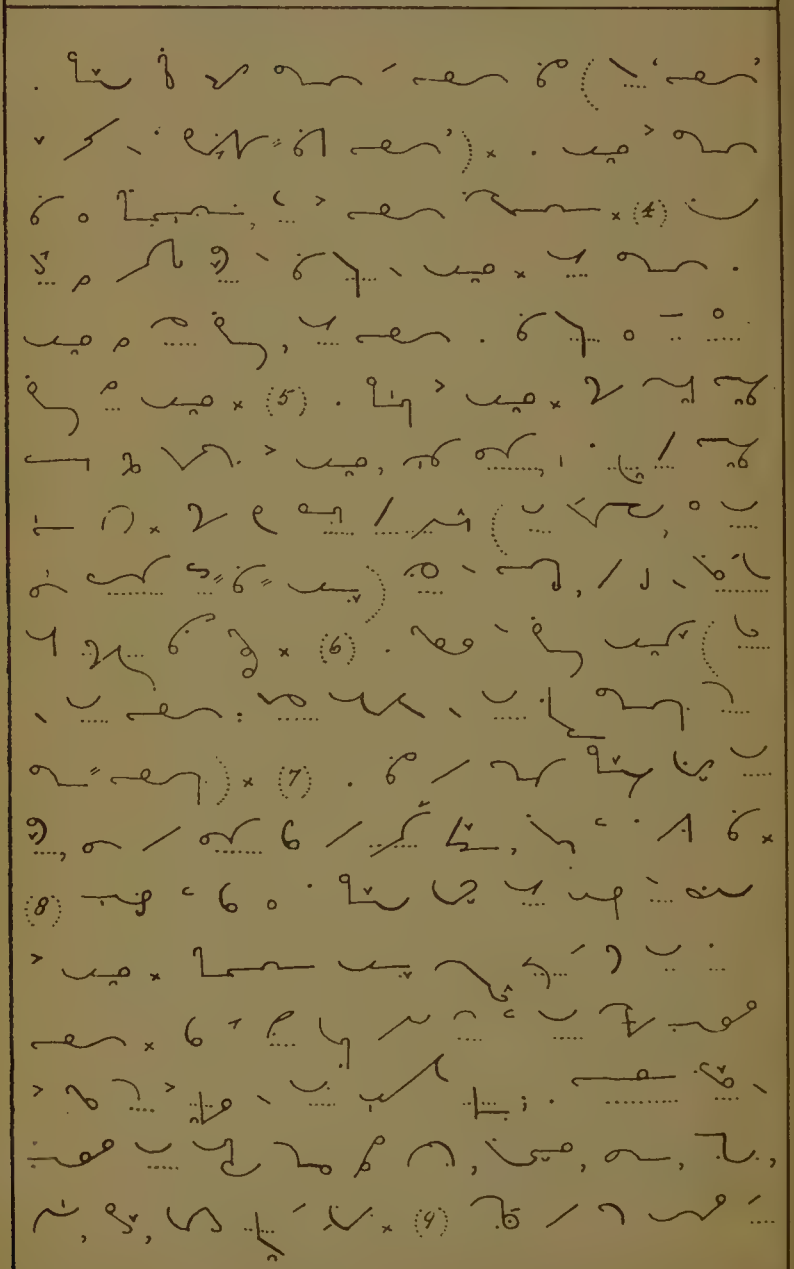


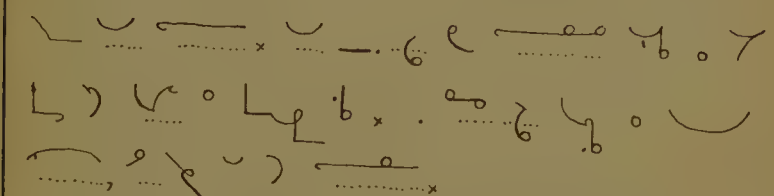
. columnar carcinomata ' glandular tumours



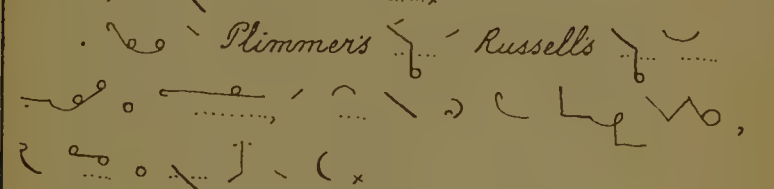
. spheroidal-celled carcinomata '... sarco-

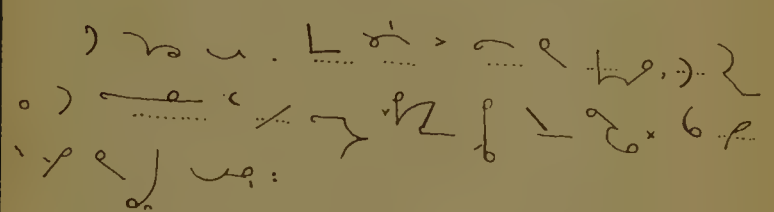






Plimmer's *Russell's*

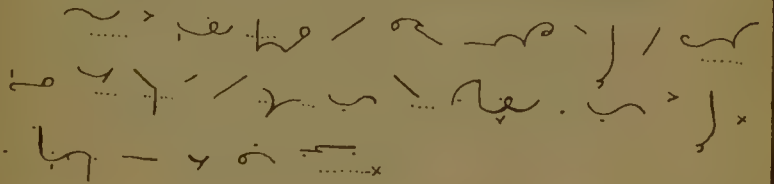




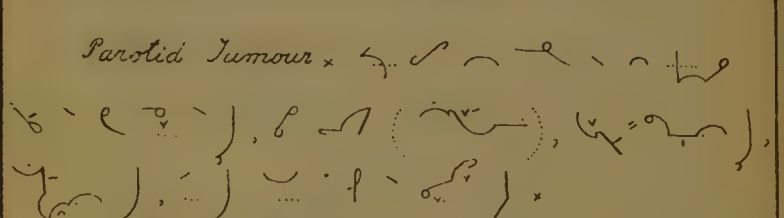
Innocent

Malignant

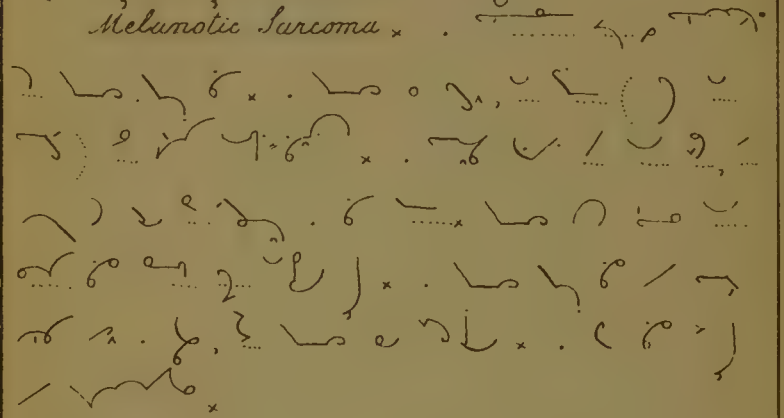
Maligno-innocent *hyperrephroma.*



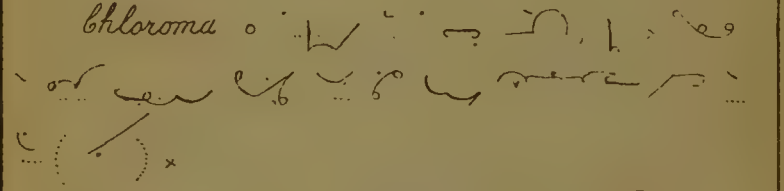
Parotid Tumour ×



Melanotic Sarcoma ×

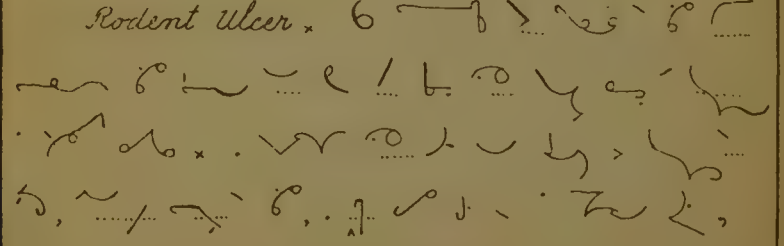


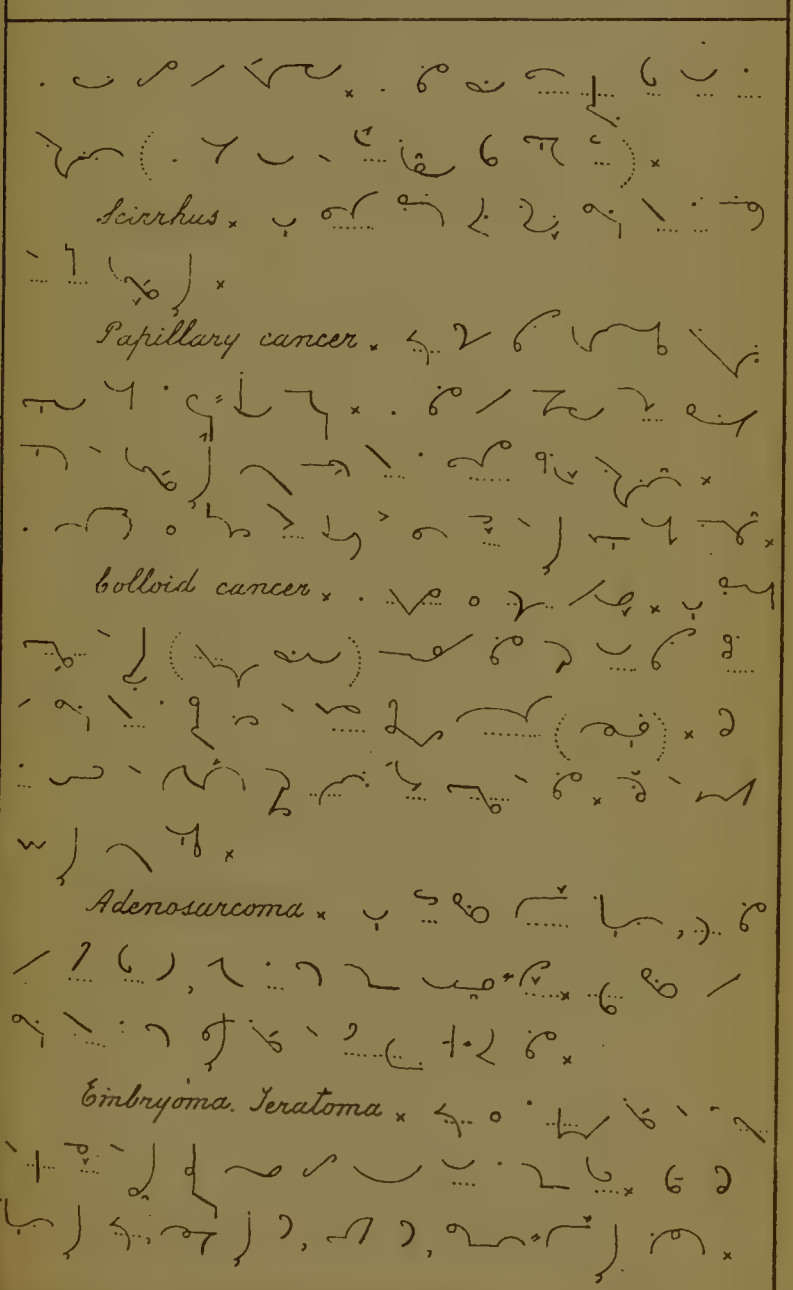
Chloroma ○



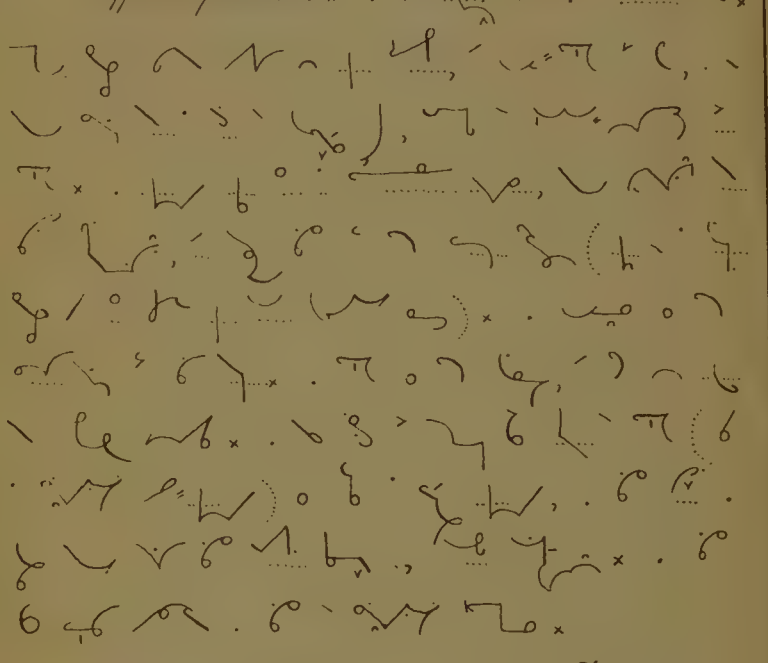
Psammoma ○

Rodent Ulcer ×

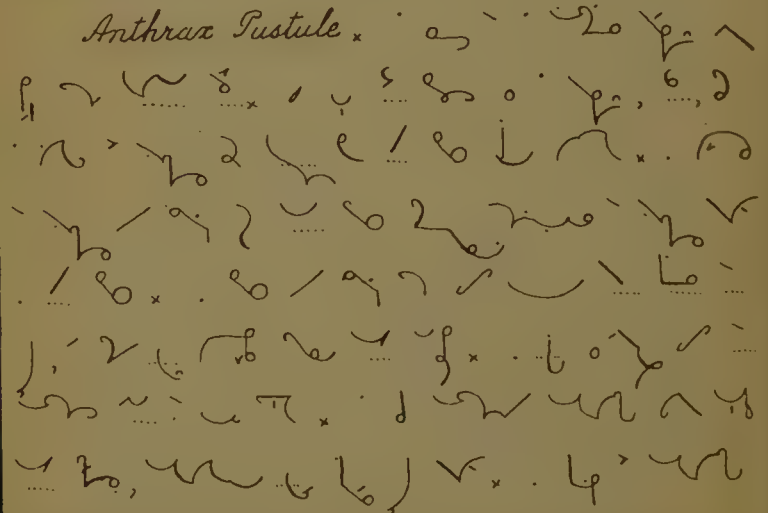


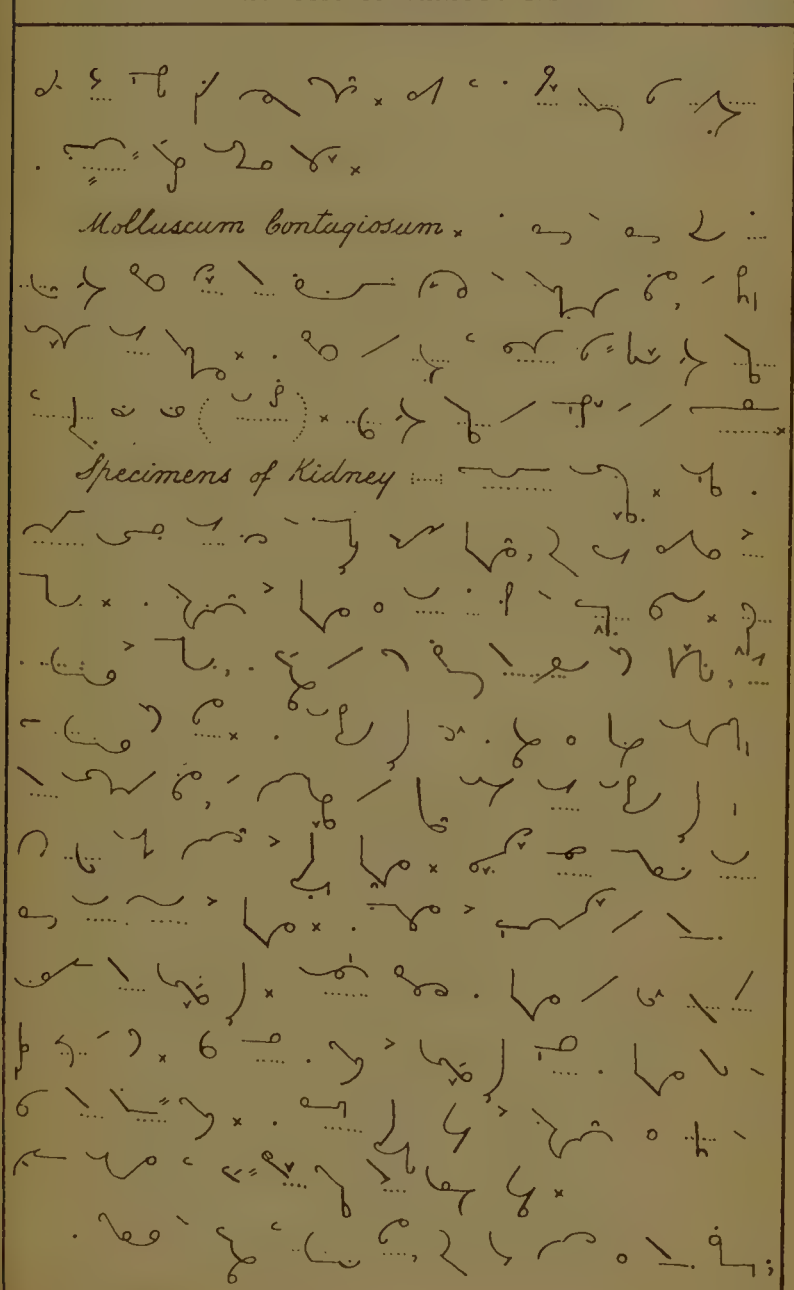

Scirrhus
Papillary cancer
Colloid cancer
Adenosarcoma
Embryoma. Teratoma

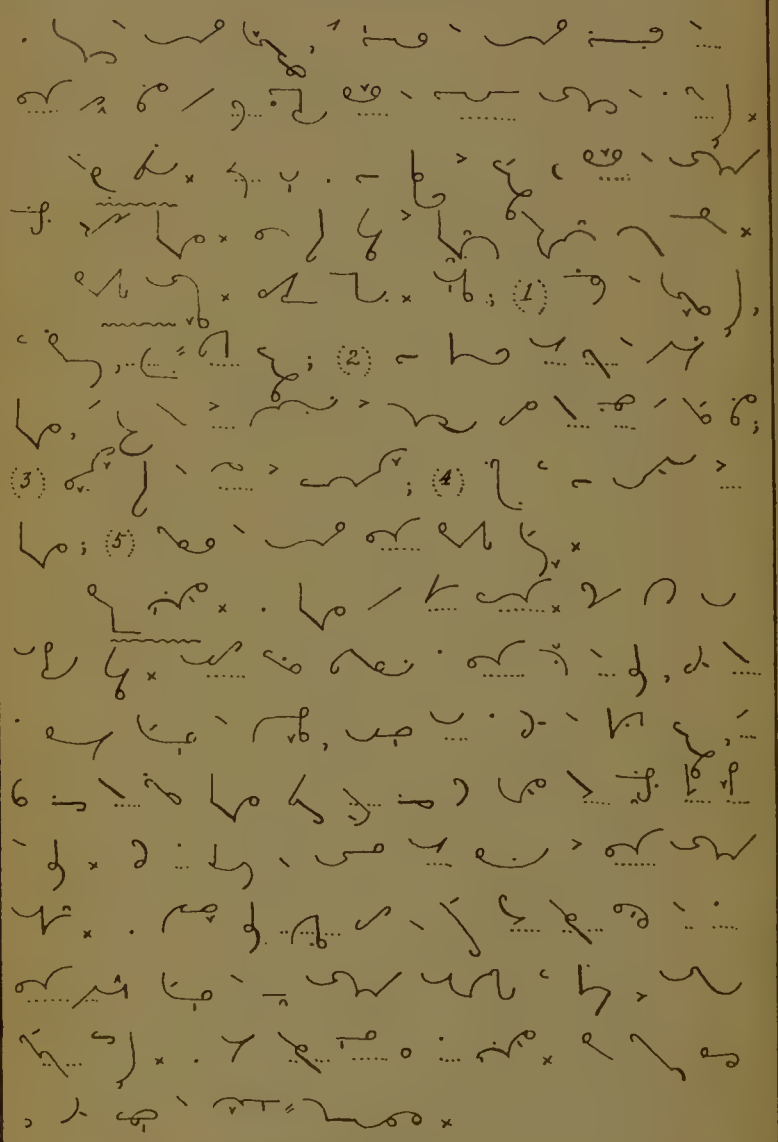
Hypernephroma



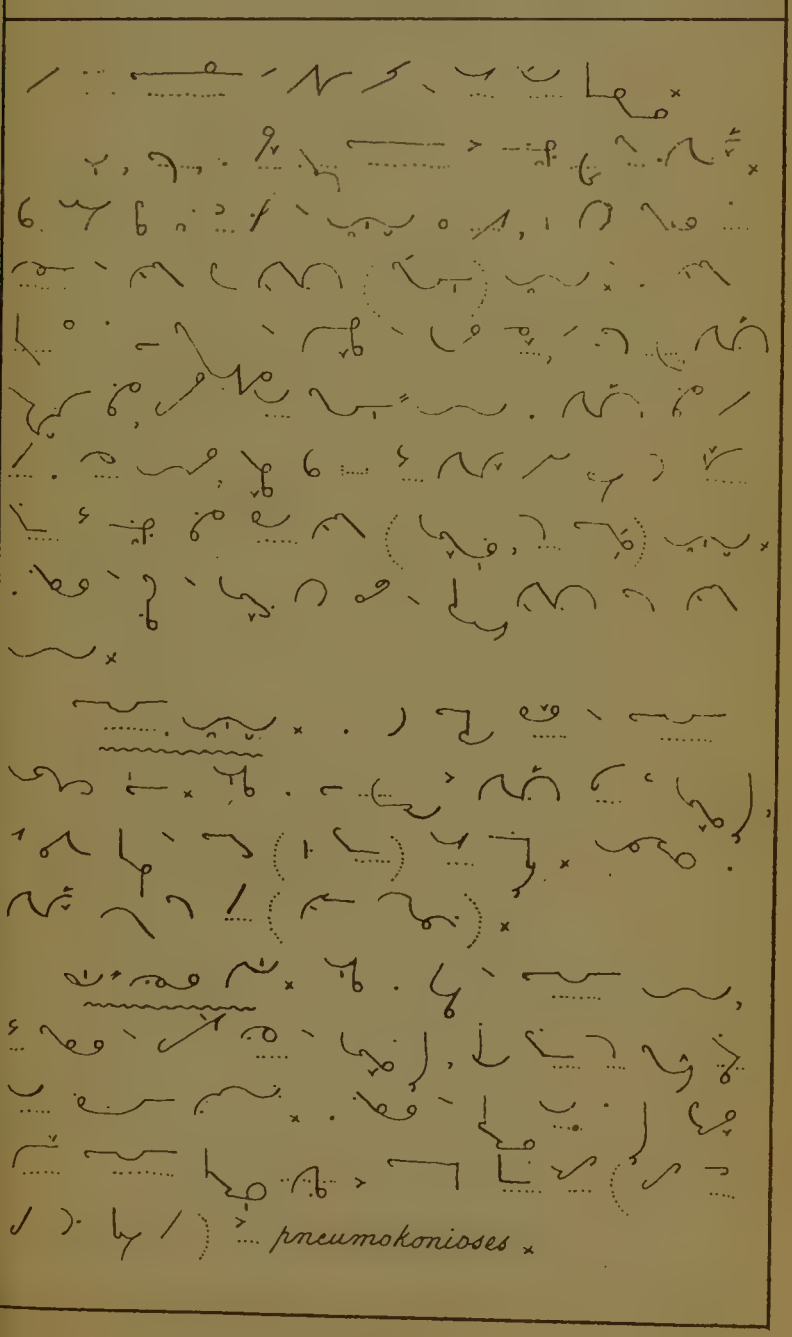
Anthrax Pustule

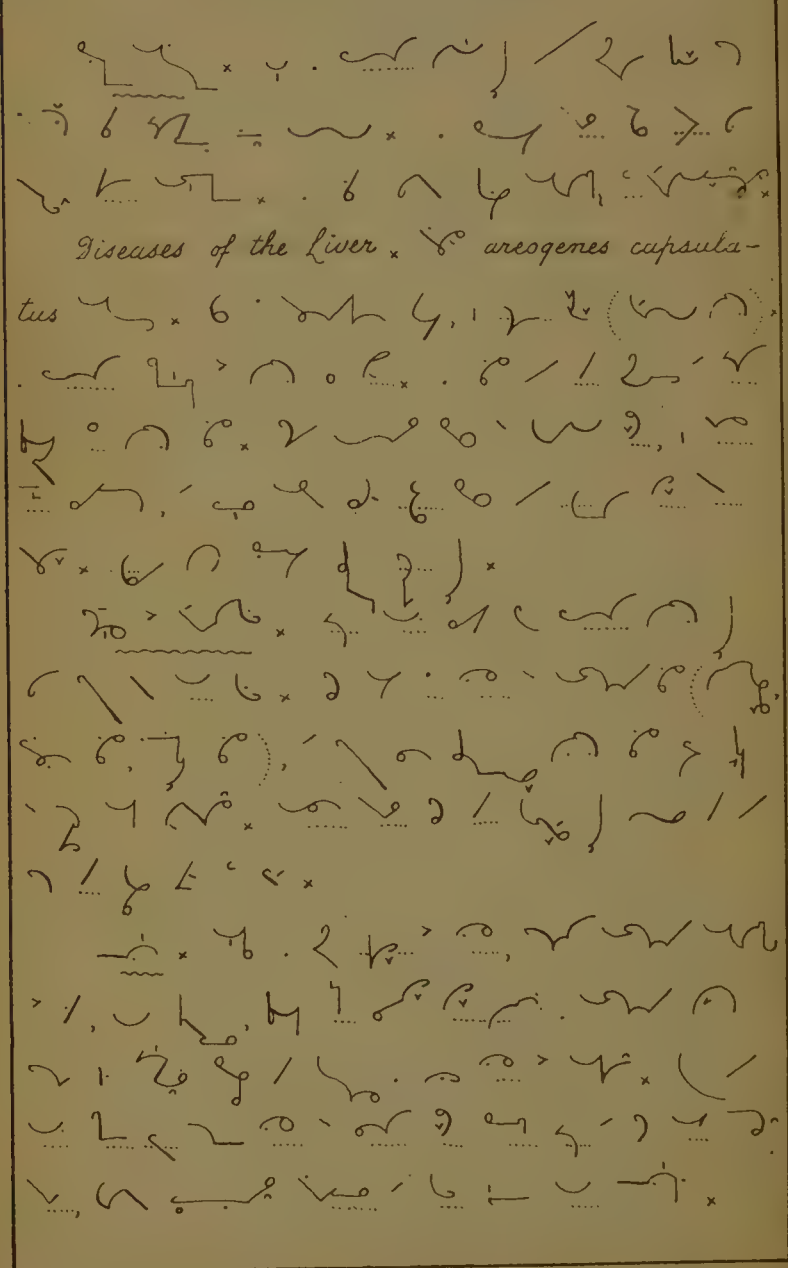


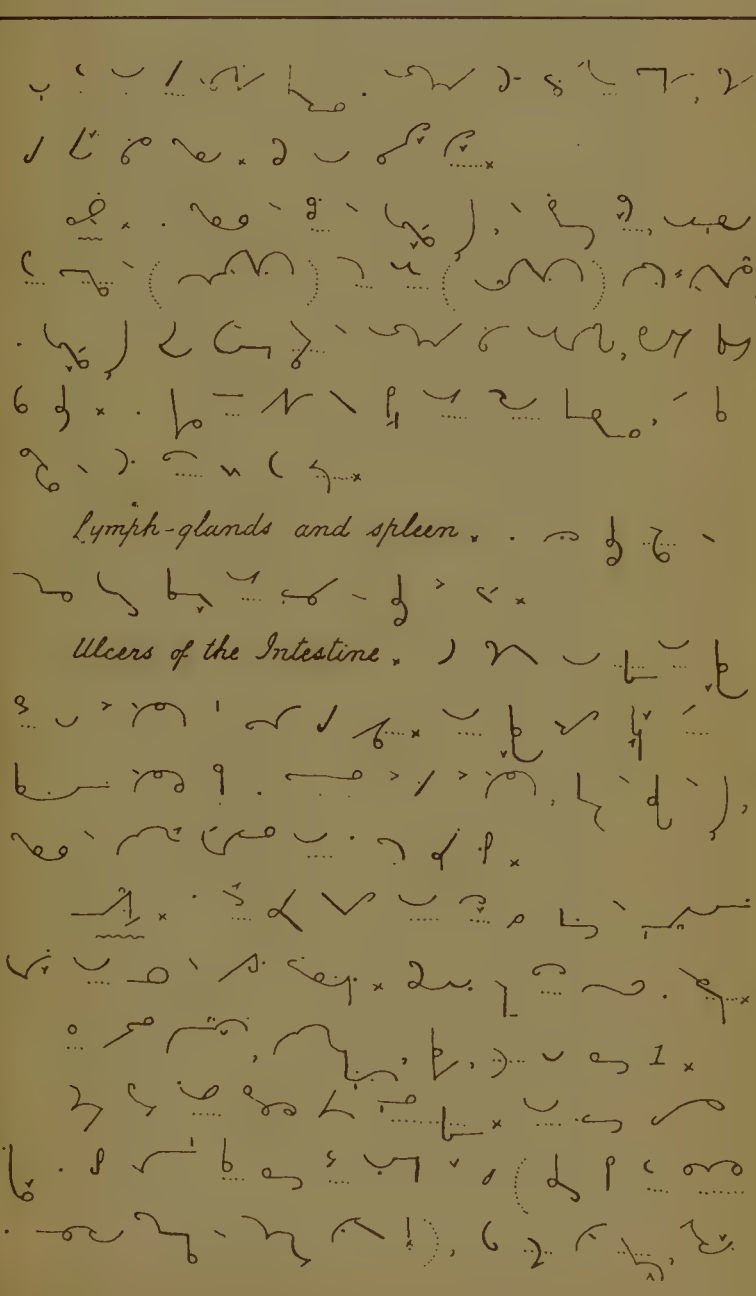


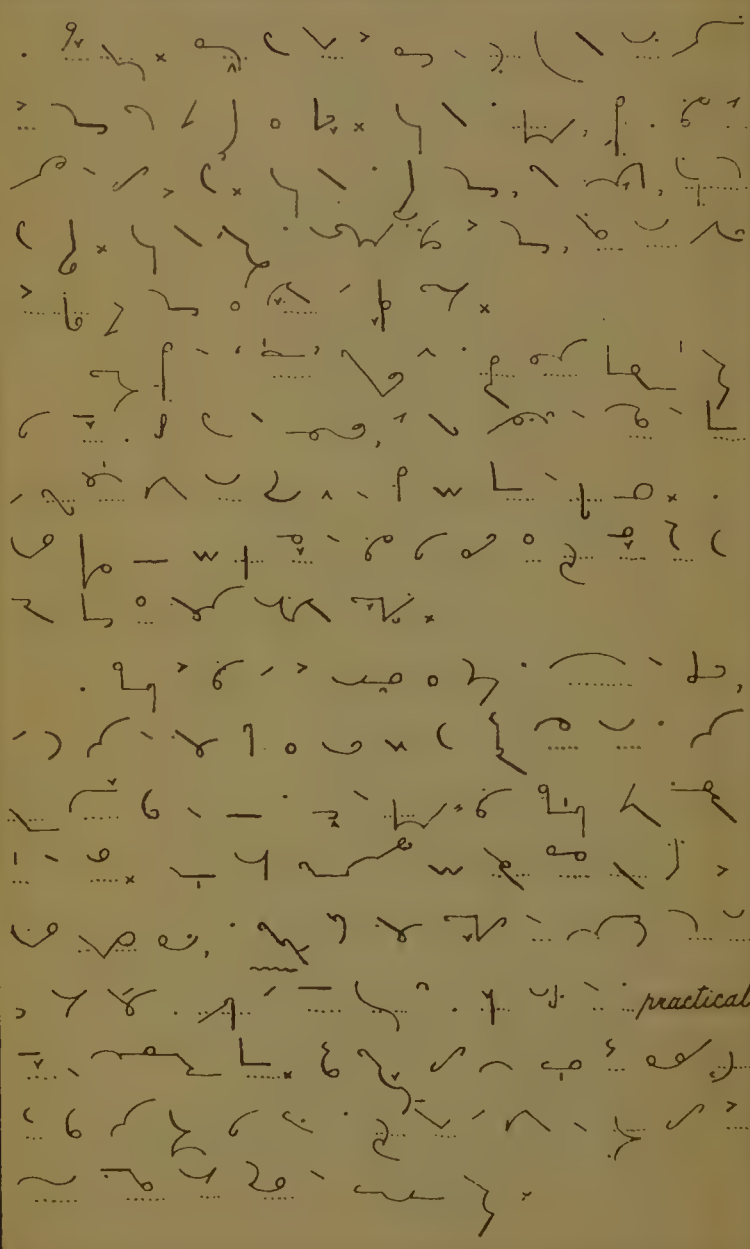


Diseases of the lung


pneumokonioses





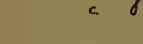


Appendix.

Toison's fluid — Sodium Chloride 1 gm.
Sodium Sulphate 8 gm.
Glycerin 30 c.c.
Distilled Water 160 c.c.
Methyl violet 0·025 gm

Hayem's fluid. — Sodium chloride 1 gm.
Sodium Sulphate 5 gm
Mercuric chloride 0·5 gm
Distilled water 200 c.c.

Harris' haematoxylin. — Haematoxylin 1 gm
Alcohol 10 c.c

 Potash or Ammonia alum 20 gm
Hot water 200 c.c.

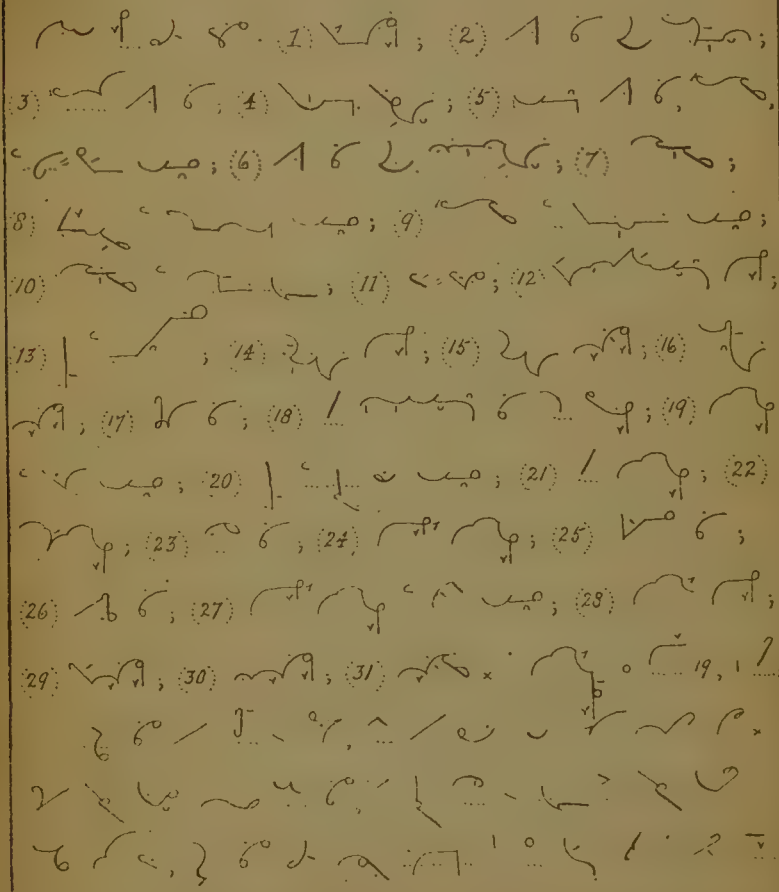
Picric-erythrosin stain erythrosin 4 c.c.

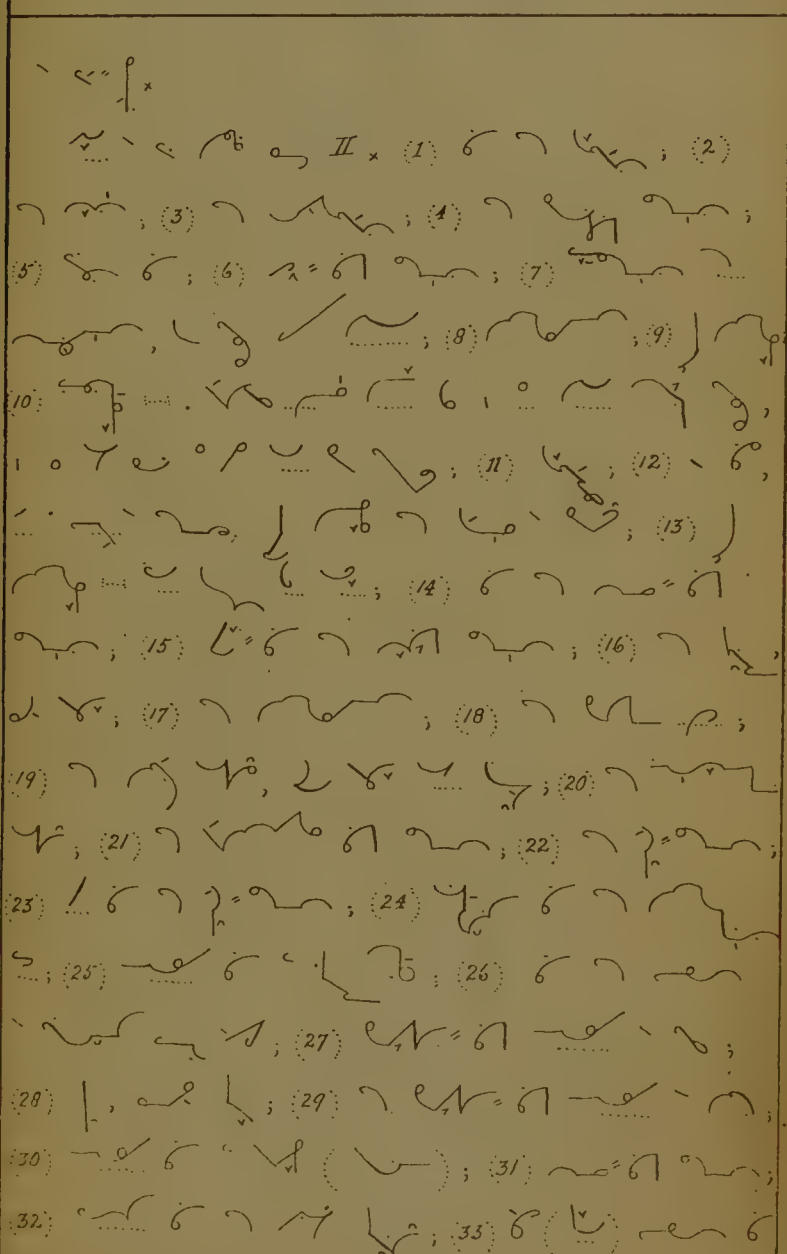
picric acid 50 c.c.

Distilled water 100 c.c

Calcium carbonate

Description of Plate.





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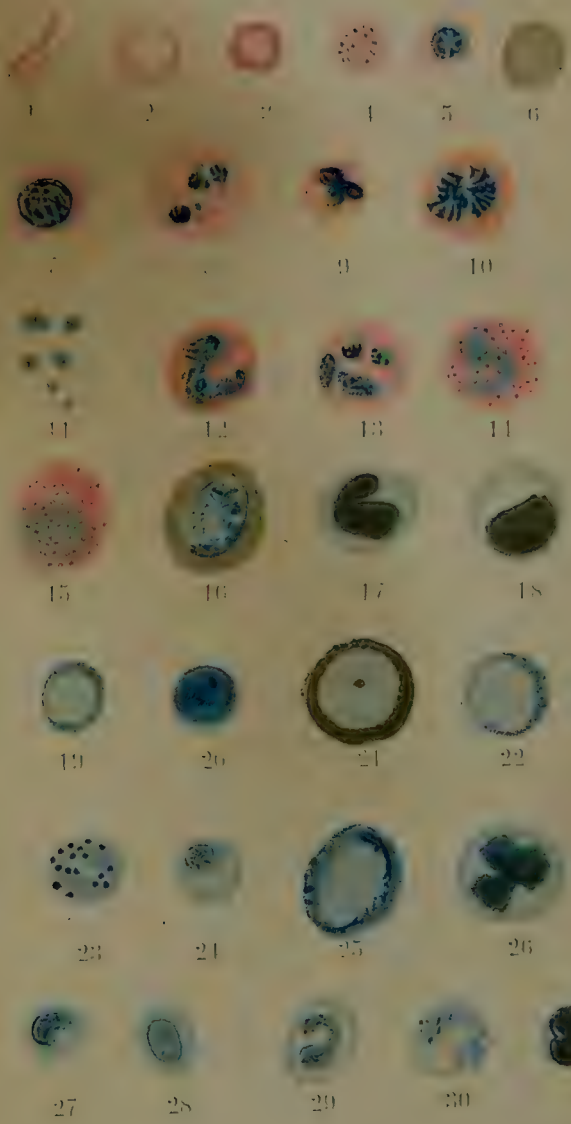
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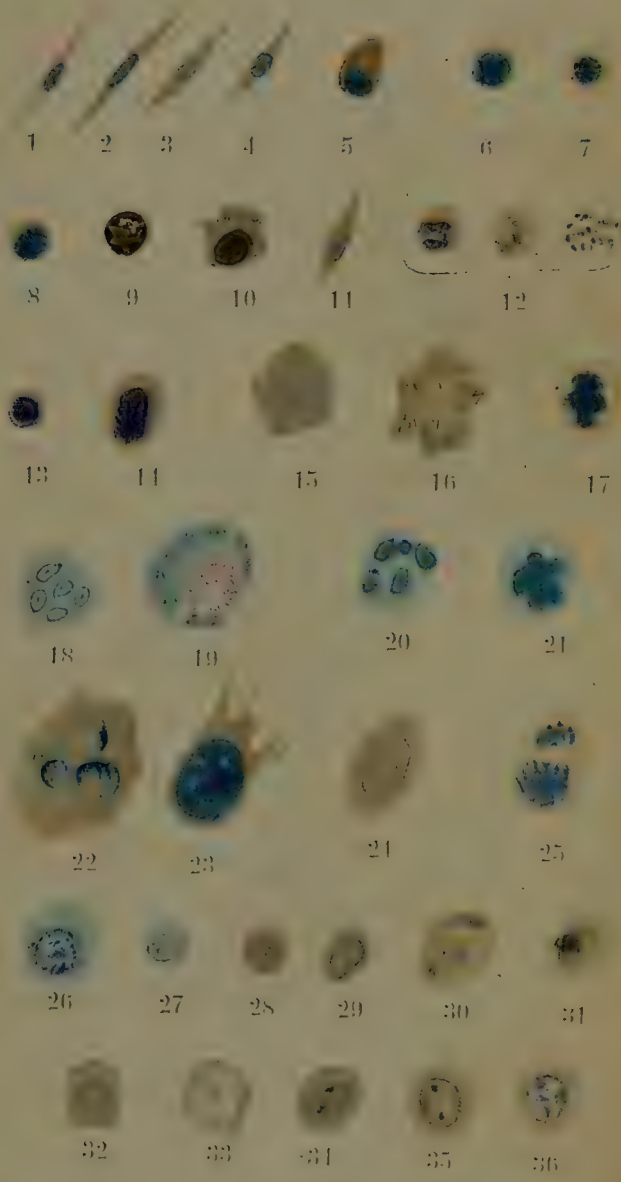
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II